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Title:
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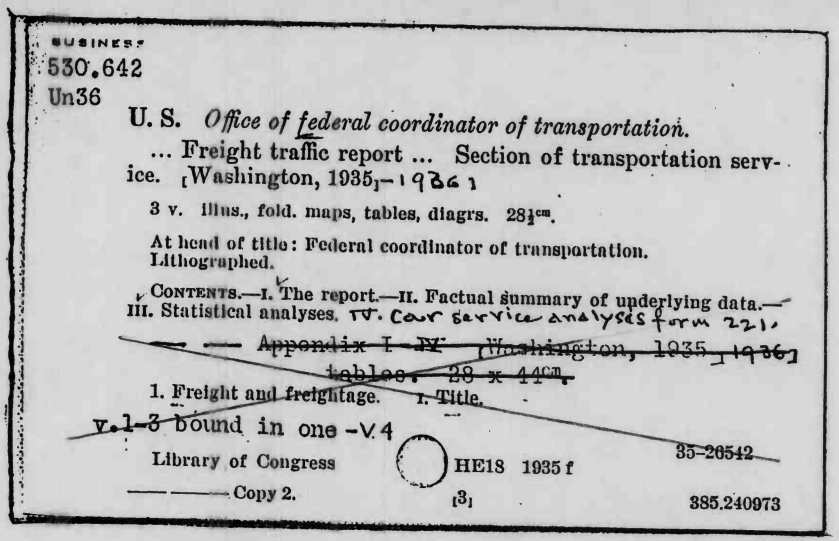

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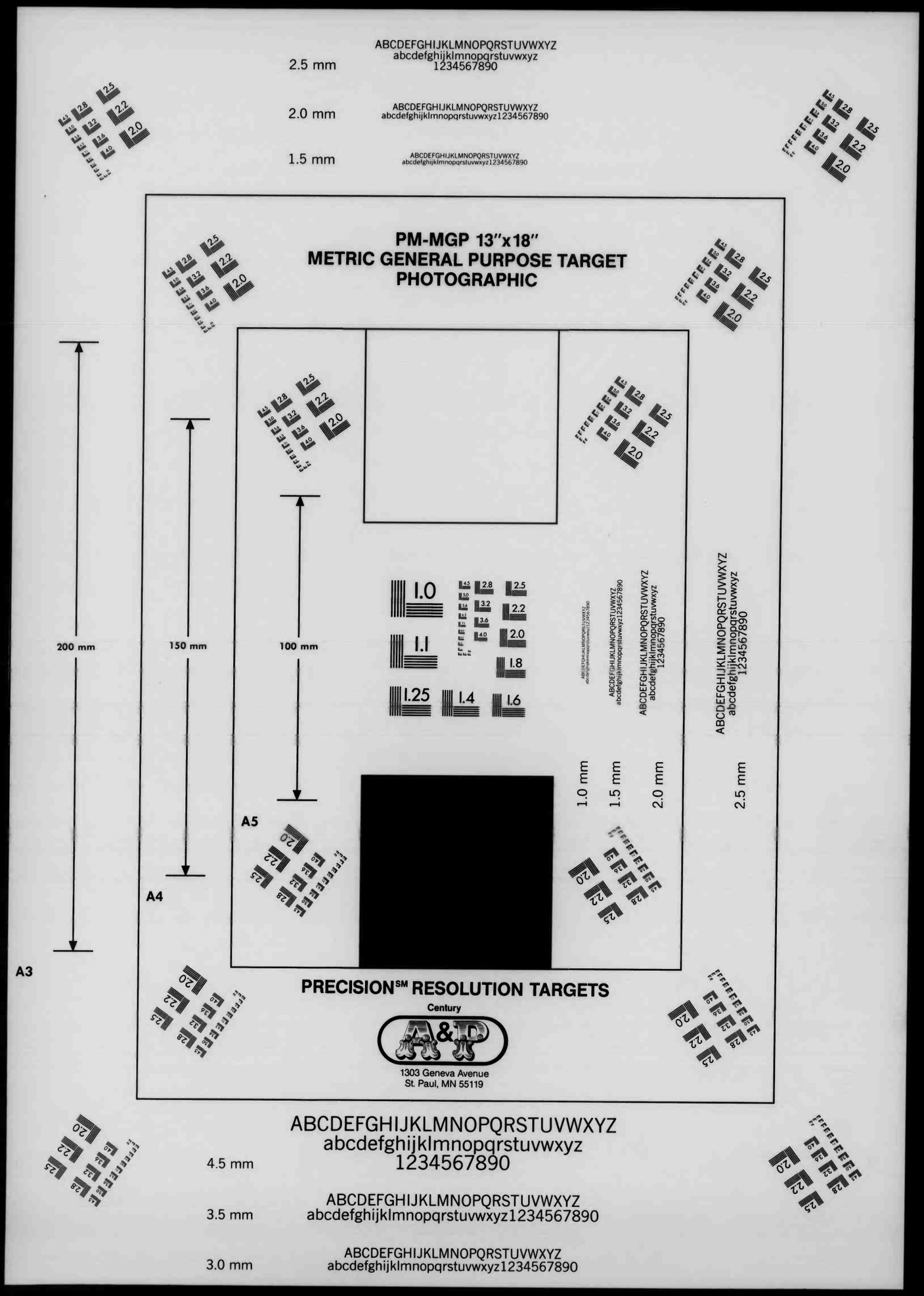
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FEDERAL COORDINATOR OF TRANSPORTATION

# FREIGHT TRAFFIC REPORT

THE REPORT

VOLUME I

Section of Transportation Service

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FEDERAL COORDINATOR OF TRANSPORTATION

WASHINGTON

JOSEPH B. EASTMAN
COORDINATOR

May 6, 1935

TO THE CARRIERS' REGIONAL COORDINATING COMMITTEES:

I transmit herewith, for your consideration, a report on Freight Traffic, prepared by my Section of Transportation Service, under the direction of Mr. J. R. Turney. It covers all such traffic, except the so-called merchandise traffic, which has been covered in a previous report. Not only the freight traffic handled by the railroads is included, but also that handled by the water carriers, the highway carriers, and the pipe lines.

The report is the result of a study which undertook to get the basic, fundamental facts in regard to this traffic, including the unit costs of every phase of operations, the character of service furnished and equipment used, the rates charged, and the extent to which present methods and practices are or are not well suited to modern commercial needs and competitive transportation conditions. These facts have been obtained, not only for the railroads, but for the other forms of transportation, so that comparisons can be made. Such information has never hitherto been assembled with anything like the same degree of completeness, and most of it has not been available at all.

In my judgment, the Section has done an extraordinary piece of work in gathering and analyzing these data, and it has involved constant, unremitting labor in which regular hours of service have been completely disregarded. The information has been obtained from the railroads, the other transportation agencies, shippers, and manufacturers, and they also have devoted a great amount of time and labor to it. For this hearty cooperation I am most grateful.

All conclusions and suggestions in this report are based on this underlying factual survey. They have not been drawn out of the air, but have been derived from the facts and statistics which have been assembled. The supporting data are indicated in great detail.

Some of these conclusions and suggestions will be regarded as radical or revolutionary, and I anticipate that they will be received with skepticism. That is a normal attitude, and an entirely appropriate one, so long as the skepticism is open-minded. The matters dealt with in the report are of such vast scope and importance that definite recommendations with respect to changes in present methods and practices, from me or from my Section of Transportation Service, would not be justified at this stage nor until the data have been reviewed by others. We offer, therefore, not recommendations but suggestions.

For my own part, I express for the present only the conviction that modern commercial needs and competitive transportation conditions imperatively demand a thorough reexamination of the operating methods of the railroads, of their service and equipment, and of their rate structure. If the report herewith submitted demonstrates nothing else, it demonstrates this. I believe that the need for many comprehensive changes will be found. The report and the data which accompany it will, I am confident, be of great value in such a reexamination.

Joseph B. Eastman

FEDERAL COORDINATOR OF TRANSPORTATION
SECTION OF TRANSPORTATION SERVICE
WASHINGTON

J. R. TURNEY.
DIRECTOR

May 1, 1935

MEMORANDUM TO THE COORDINATOR:

Herewith is the Section's Freight Traffic Report. This report has been compiled in four distinct stages. The primary step was the mechanical tabulation in detail of the underlying data. These tabulations are contained in two volumes of appendices which will be transmitted to you shortly.

The second step was the statistical analysis of these tabulations, the results of which are contained in Volume III of the Report, entitled "Statistical Analyses".

The third step was the textual summary of the more salient facts revealed in the statistical analyses, the results of which are stated in Volume II of the Report, entitled "Factual Summary of Underlying Data".

The fourth and final step was a statement of the ultimate facts found and conclusions with respect thereto. These comprise the report proper and will be found in Volume I, herewith transmitted.

To facilitate consideration and limit the necessity for explanatory matter, in the report proper, the Factual Summary and Statistical Analyses are integrated with the Report under a single outline, with the same topic treated in each case under a single system of numeration. This makes it possible to check the statements to the degree desired by each reader.

The ultimate facts or conclusions are stated in the report proper. The evidence upon which they rest is recapitulated under the same section number in the Factual Summary, and the statistical data from which the evidence was drawn are in turn shown, still under the same section number, in the Statistical Analyses.

The conclusions stated are those of the Section reached after consideration of the data. The volume and scope of the surveys make it impossible for any one to speak with finality. For this reason the Report is intended to provoke consideration of the basic data and their implications, and to point the need for a planned program over a period of years, and to suggest rather than to define that program.

J. R. Turney

## ACKNOWLEDGMENTS

The Section acknowledges with the deepest appreciation the efforts of the many organizations and individuals who have cooperated in making the Report possible. They are so numerous that it is not feasible to name them all. The Report, however, would be deficient without special mention of appreciation of the cooperation of thousands of shippers and industrial traffic men who, at great expenditure of time and money, compiled and furnished information with respect to their shipments; to the railway, waterway, pipe line and highway carriers who supplied data concerning their operations which were essential to the report and which could only be compiled by them; and to the large number of manufacturers of transportation equipment who in many cases made special engineering studies.

Railway companies loaned the services of many of their officers whose advice and assistance were invaluable. In this category are O. J. Rider of the Baltimore and Ohio Railroad, C. C. Kirk of the Pennsylvania Railroad, F. J. Ginn of the Chesapeake and Ohio Railway, H. E. Coverston of the New York Central Railroad, G. W. Lamb of the Atlantic Coast Line Railroad, J. P. Latz of the Missouri Pacific Railroad, W. T. Peyton of the Missouri-Kansas-Texas Railroad Company, E. F. Saur of the Pennsylvania Railroad, Glenn F. Vivian of the Chicago, Milwaukee, St. Paul and Pacific Railroad, and Kirby M. Post of the Cotton Belt Route.

Acknowledgment of highly valuable assistance is also due the several Bureaus of the Commission and particularly to Dr. M. O. Lorenz, Messrs. B. T. Elmore and G. A. Casey of the Bureau of Statistics, C. G. Jensen of the Bureau of Traffic, and F. P. Pfahler of the Bureau of Service.

The Section is particularly grateful also for advice which it received from Dr. Charles L. Raper of Syracuse University and Mr. Kent T. Healy of Yale University.

Acknowledgment is also due for assistance received from Mr. John L. Rogers, Executive Assistant, and to the Sections of Regional Coordination, Car Pooling, Research, Purchases and Labor.

Data with respect to waterlines were analyzed and compiled under the direction of Messrs. Walter Bockstahler, A. E. Baylis and R. W. Engle; with respect to rail carriers, under the direction of Mr. Merle J. Reynolds; and with respect to pipe lines by Dr. G. Lloyd Wilson. A general summarization of the data underlying these studies was made under the direction of Mr. Arthur F. White. The field terminal trucking study and study of modern freight vehicles were made under the direction of Mr. Robert C. King, and the motive power survey and report were largely the work of Mr. A. B. Cole. These men were members of this Section. The analysis of over-the-road trucking costs was made by Mr. Warner C. Tufts, Section of Research.

The foregoing, however, would be incomplete without acknowledgment of the loyal and efficient service rendered by all the employees, not only of this Section, but the Stenographic and Statistical Sections, all of which was cheerfully done, and in some cases without compensation.

# SUMMARY

## THE TRAFFIC

I UNDERLYING SURVEYS The report is the result of concurrent surveys of freight transport operations of all types of carriers. It assembles traffic, service, charge, and operative data, essential to design a coordinated system of transport, utilizing all types of facilities and agencies. (Page 15)

II PROFITABILITY OF FREIGHT SERVICE Freight transport tends to become unprofitable because of a surplus of facilities, competitive ratemaking and service, and utilization of obsolete equipment, plant and methods as well as less economical modes of transportation. (Page 16)

III FREIGHT VOLUME It appears unlikely that increased production within the immediate future will provide a volume of carrier freight traffic as large as that which existed prior to 1930. This is true because of the relocation and decentralization in industry, change in power and fuels, and increase of private transportation. (Page 18)

IV FREIGHT TRAFFIC MARKETS The bulk of American traffic is produced in small towns but principally consumed in large cities. Basic materials are produced in the South and West and processed and largely consumed in the East. (Page 18)

V FREIGHT COMMERCE American commerce has definitely assumed a national aspect. This development requires subordination of provincial to national considerations in dealing with carrier relations, facilities, operations and charges. (Page 19)

## THE SERVICE

VI ELEMENTS OF TRANSPORTATION SERVICE Modern business demands celerity in movement, universal door-to-door service and equipment adapted to business needs. (Page 23)

VII TRANSPORTATION SPEED The potential superiority of the railway, resulting from its road speed, is dissipated by voluntary restrictions, infrequent schedules, and frequent yardings and interchanges. As a result, a large volume of carload traffic now moves by highway. (Page 23)

VIII COMPLETENESS OF TRANSPORTATION SERVICE Equipment is now available whereby rail and water carriers can render complete service to all patrons economically. (Page 24)

IX SCHEDULE CORRELATION The motor vehicle is superior in its ability to synchronize its schedules with the patron's needs. Rail and water carriers are handicapped by a limited number of schedules, and by operation of parallel schedules for competitive reasons. Rail carriers have it within their power to reduce, if not to overcome, this handicap. (Page 25)

X ADAPTNESS Carriers can reduce substantially the shipper's cost of transportation by providing vehicles which are shock-proofed to reduce packing, fitted with economical temperature control apparatus, and constructed to facilitate cheap loading and unloading. (Page 26)



## THE CHARGES

XI ELEMENTS OF FREIGHT CHARGES The present system of freight transport charges should be reorganized to meet conditions, which have resulted from the ability of the shipper to provide his own transportation. (Page 29)

XII FREIGHT TRAFFIC SALES UNIT The present carlot sales unit and minimum weight requirement are no longer adapted to commercial needs, are conducive to uneconomical loading, and tend to divert cargo shipments from the railways. The price scale should vary with the size of shipment, from a ton to a train load, permitting shipments in any amount, but creating an incentive for full instead of minimum loading. (Page 30)

XIII FREIGHT COMMODITY CLASSIFICATION Modern conditions require that all commodities be classified objectively into a limited number of groups, according to nature, utility and state of processing, and that such groups be rated solely with respect to their potentialities to produce the maximum volume of profitable traffic, excluding consideration of cost characteristics. (Page 31)

XIV PRICE LEVEL The present level of railway rates generally is higher than that of other carriers, and in many cases exceeds the cost to the shipper of providing his own transportation. To assure efficient and stable service, the price level should be designed to make transportation profitable. (Page 34)

XV PRICE STRUCTURE The data indicate that different carrier rate structures, in different territories, are no longer justified by present conditions. To avoid discrimination among shippers and uneconomic distribution of traffic between carriers, the present rate structure should be readjusted to evaluate the distinctive cost characteristics of shipments. (Page 68)

XVI TARIFFS Tariff complexity can be reduced and the utility increased by unification of rate systems and publishing authorities, by simplifying commodity classification and by grouping carrier routes into a limited number of definite channels. (Page 71)

## THE OPERATIONS

XVII STATISTICAL ANALYSES The statistical data of all transport agencies should be uniformly amplified to permit analysis of operations for budgeting, managerial control and supervision, operating and plant improvement, pricing, servicing, marketing and planning. (Page 73)

XVIII CARRIER INQUIRIES The underlying statistical analyses of the report are based upon data furnished by rail, water, pipe line and highway carriers. Generally these data embrace the actual traffic and operating statistics of the entire base year. (Page 76)

XIX NATURE OF OPERATIONS Capacity of present transport facilities appears to exceed the prospective demand. Additional facilities are justified only when their economic superiority makes present facilities obsolete, and when demanded by general as distinquished from individual or local welfare. (Page 77)

XX CIRCUITY OF MOVEMENT Additional cost of transport, resulting from the circuity of the average rail shipment, can be reduced by cooperative group routing. (Page 77)

XXI OVERALL COSTS To provide an equivalent amount of transport service, the pipe line carriers require the least in capital investment, and the rail carriers the most, if governmental expenditures for waterways and highways be excluded. The cost of operative transport is cheapest in the case of water cargo carriers, and most expensive in the case of rail and water carlot carriers. (Page 78)

XXII CARRIER FIXED PLANT Due to the burden of an exclusive transport way, rail and pipe line unit costs for maintenance of fixed plant are relatively the same, and if government expenditures for maintenance of waterways and highways be excluded, much higher than the comparable costs of carriers using such ways. (Page 79)

XXIII TRANSPORT POWER The data indicate that in thin traffic areas, consideration should be given to the utilization of small-power freight cars and light locomotives which manufacturers now offer. (Page 82)



XXIV TRANSPORT VEHICLES A railway car of shock-proof chassis, with multiple sets of containers, which are interchangeable between railway, waterway, and highway vehicles, versatile in design, adapted to present day sales units, and accessible for economical loading and unloading, would improve transportation service, reduce its cost and discourage uneconomic distribution of traffic. (Page 85)

XXV CONDUCTING TRANSPORTATION The cost of operating carrier facilities is relatively greater for carlot than for cargo carriers. Substantial economies in rail transportation costs appear possible in operation of freight station facilities and in assemblage operations. (Page 90)

XXVI TRANSPORT OVERHEAD Rail overhead expenditure for executive direction, sales promotion and insurance are relatively lower than comparable expenses of the other types of carriers, while rail tax expenses are relatively higher. (Page 93)

XXVII YARD AND TERMINAL OPERATIONS Economy in rail yard service has been sacrificed to attain economy in road movement by heavy train loading, with the result that yard costs are greater than road costs. The terminal cost of rail and water carlot carriers far exceeds that of other carriers and is about twice the cost of highway service. (Page 95)

XXVIII LINE OPERATIONS Due largely to intermediate yardings and to the distribution of freight from terminal centers by way trains, rail line costs are relatively higher than costs of comparable services of all other transport media, except highways. (Page 98)

XXIX INTEGRATED MOVEMENT It appears that rail transport can be improved and its cost reduced by motorizing many collection and delivery services, establishing cargo (train load) service, and, in the case of many distributive operations, by substituting small-powered, light trains of a few cars for conventional trains of cargo type but of carlot consist. (Page 101)

XXX INTERCARRIER OPERATIONS The present policy of wide open routing leads to preferential treatment of shippers, undue prolixity and complexity in tariffs, circuitous routing, unnecessary interchanges, excessive terminal delays and thereby burdens industry, as well as the carriers, with avoidable waste. (Page 104)

## COORDINATION

XXXI OBJECTIVES Coordination seeks, by a speedy, complete, convenient carrier service at simple, cheap but profitable rates, to develop the nation's transport adequately to fulfill every need of industry, promote trade and commerce among its citizens, develop markets of production and distribution, and stabilize the industry to the end that labor and capital employed therein shall be well compensated and made secure. To attain these objectives, it proposes to promote beneficial competition and to eliminate evil competition, to fuse common facilities of whatever kind into a single transport system, and to integrate joint functions into common agencies. (Page 106)

XXXII COMPETITION Competition, insofar as it stimulates service, efficiency and economy, should be promoted, but the evils of unrestrained agency, price, market and plant competition need to be avoided. (Page 107)

XXXIII MANAGEMENT Integration of commerce, territory, and industry makes necessary a parallel integration in joint carrier agencies of the common functions of pricing, through scheduling, redundant service, routing, marketing and research. (Page 109)

XXXIV AGENCIES Each form of transport is superior to each other form in some important respects, and inferior in others. All should be integrated by joint rates, interchangeable equipment, and common facilities, under a program designed to use each form in the field of its greatest utility. (Page 111)

XXXV OPERATIONS Wherever necessary for serviceable, efficient, or economical operations, all carrier equipment, terminals, and facilities should be used jointly and interchangeably by carriers of all types, under appropriate and fair user arrangements. (Page 113)

XXXVI EFFECT The suggested plan of coordination will promote public welfare and at the same time protect and conserve the interests of owners and employees of the transportation industry. (Page 114)



## THE REPORT

## THE TRAFFIC

### I THE UNDERLYING SURVEYS

1. Description. This report deals with transportation of freight within the United States on railways, waterways, and highways, and in pipe lines. Railways are operated as common carriers to transport freight in less than carlots and in carlots. Water carriers are of two types - carlot common carriers which transport freight in less than carlots and in carlots, and cargo private or contract carriers which transport it in cargo lots. Pipe lines for the transportation of petroleum traffic in cargo lots are generally operated by common carriers, but chiefly for affiliated companies. Motor trucks are used by common carriers chiefly to transport less than truck lots and by contract carriers and private carriers usually to transport truck lots.

The data considered are from reports and statistical publications of governmental agencies, field investigations, and returns to the questionnaires received in the course of eight underlying surveys, viz: The Shipper, Rail Carload Traffic, Railway Light Motive Power, Transportation Vehicles, Freight Stations, Waterway Traffic, Petroleum Traffic, and Highway Operations.

2. Objective. The objective of the surveys was to compile data necessary to define in broad outline the characteristics of an efficient system of transportation, serviceable to commerce and profitable to its owners, in which all types of transport facilities would be coordinated, each within the sphere of its service utility. The data have been arranged to depict: (1) The volume, source and flow of freight traffic; (2) the transportation service presently accorded, that demanded by the requirements of commerce, and that possible by modernization and coordination; (3) the level, structure, and commercial aptness of carrier charges and tariffs, with steps necessary for simplification, improvement, and adaptation to commercial realities; (4) the location, function, and service costs of transportation, present and potential; (5) the aptness of carrier equipment, facilities and methods; and (6) the coordinative steps which are indicated to attain the primary objective.

3. Typicality. The year 1932, the latest full year for which information was available, was selected as the base year for the surveys of Rail Carload, Waterway and Petroleum Traffic, and the year 1933 for the Shipper survey. Gauged by the results of the average of a 12-year period, consisting of the 10 preceding and the 2 succeeding years, the rail traffic revenues and costs in 1932 were about 39 percent below the average; but the rate level was substantially the same. The ton-mile unit cost of 1932, including all expenses and taxes, was the same as the average. The unit costs of maintenance and transportation were less and of overhead were greater than the average.

## II PROFITABILITY OF FREIGHT SERVICE

4. Income. In 1932 the railways, after payment of operating expenses, including car hire and taxes, had left less than 570 million dollars from freight traffic, which was sufficient to pay a return of only approximately 3 1/9 percent upon the freight proportion (18 billion dollars) of the total railway investment. For the 12-year period, however, the revenues were sufficient to pay an average yearly return of approximately 5 percent upon the freight investment (1932).

In 1932 the reporting water carrier groups of each class, common, contract and private, suffered in the aggregate operating deficits of about 10 percent. Of the common carriers by water, all suffered operating deficits except the Atlantic Coastwise group and the Inland Waterways group, each with an operating ratio of 94 percent. Operations of contract carriers were generally profitable except those on the Great Lakes.

The operations of the pipe line carriers were uniformly profitable. For the pipe lines as a whole, a profit of 110 million dollars was realized, which was over 14 percent upon their investment of approximately 763 million dollars and was 52 percent of their total revenues.

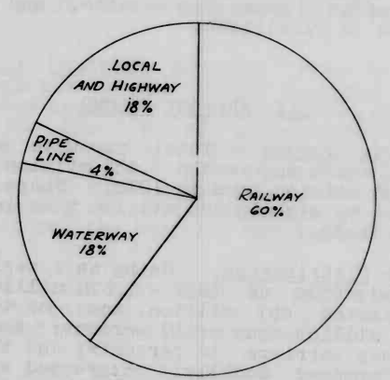
Upon the whole, therefore, with the exception of the pipe line companies,* carrier freight transportation, in the United States in 1932, was not sufficiently profitable to afford an adequate investment return, and there seems little prospect that it can be made so, without marked changes in methods and policies.

5. Causes. The causes of unprofitability in freight transportation are: (1) Insufficient traffic, due to excessive rates, inferior service, or oversupply of transport

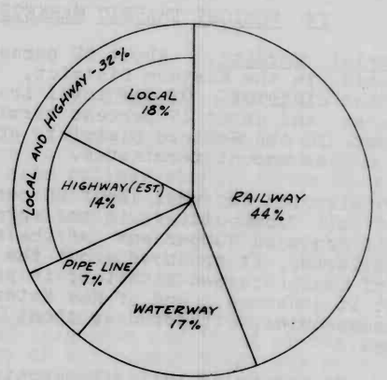
* Data for highway operations not available.



DISTRIBUTION OF TRAFFIC AMONG CARRIERS




1928 - 2330 MILLION TONS




1932 - 1570 MILLION TONS

facilities; (2) inadequate remuneration, due to cutthroat competition, ignoring of cost considerations in pricing, and competition of one agency for a traffic which can be handled more economically by another; and (3) high costs, due to insufficient traffic, excessive service, and wasteful or obsolete methods or facilities.

## III FREIGHT VOLUME

6. Aggregate Volume. Total products available for transportation, which aggregated 2,330 million tons in 1928, dropped to 1,570 million tons in 1932. There were consumed locally or moved by highway 400 million tons in 1928 and 500 million tons in 1932.

7. Carrier Distribution. Using as a basis of estimate the total production of 1932 - 1,570 million tons - the railways originated 691 million tons or 44 percent; the waterways 272 million tons or 17 percent; the pipe lines 7 percent; highway carriers 14 percent*; and the balance, 18 percent, was consumed locally. Expressed as parts of the carrier tonnage (1,293 million tons) the rails originated 54 percent, waterways 21 percent, pipe lines 8 percent and highway carriers 17 percent of the total.

## IV FREIGHT TRAFFIC MARKETS

8. Territorial Markets. About 52 percent of the rail traffic terminates in the Eastern District, and 44 percent originates in that district. Of the total traffic, about 25 percent originates and about 17 percent terminates in the Southern District. In the Western District, about 31 percent originates and a like amount terminates.

The Eastern District consumes about 20 percent more than it produces of all commodities in the aggregate. Of the Necessaries, it produces 70 percent of the amount it consumes; of Auxiliaries, it produces about the same amount as it consumes; of Semiprocessed Material, it produces over 90 percent of what it consumes; and of Raw Material, about 80 percent; of Accessories, it produces about 11 percent more than it consumes.

The Southern District, excluding Pocahontas Carriers, on the whole produces nearly 20 percent more than it consumes, largely Raw Material traffic. Of Semiprocessed Material, Necessaries, Auxiliaries, and Accessories, it produces about as much as it consumes. Pocahontas Carriers originate twice as much as they terminate, the excess consisting almost entirely of coal.

* A statistical estimate described in Factual Summary.



The Western District produces about as much of all commodities as it consumes. This balance exists in the case of Rough, Raw, and Semiprocessed Materials, and Auxiliaries. It produces 50 percent more Necessaries than it consumes, but consumes about two thirds more of Accessories than it produces.

9. Terminal District Markets. The 86 metropolitan terminal districts* of the country consumed about one half the total carload traffic in 1932 and produced approximately one fourth of it. The 1,400 odd major terminals (i.e., points at which switch engines are employed) consumed one fifth and produced one fourth of it. The remaining 33,000 smaller towns, villages, and rural communities embraced within minor terminal districts (i.e., served by train switching) produced about 55 percent of the traffic, but consumed only about 25 percent.

Ten percent of the total carload traffic was consumed in New York and Chicago areas, collectively, and 25 percent in the eleven largest metropolitan terminal districts.

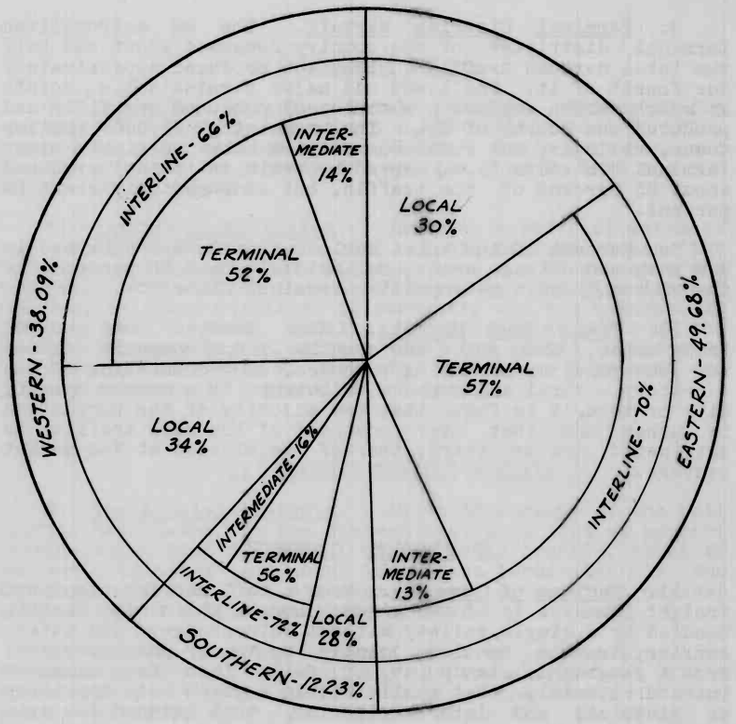
10. Trade Area Markets. When grouped into the 701 trade areas, into which the country is now commonly divided for commercial or marketing purposes, each consisting of the territory - rural and urban - tributary to a common market, city or town, it is found that the majority of the population is urban and that over one half of the rail traffic is originated and two thirds thereof terminated at the market centers.

## V FREIGHT COMMERCE

11. Factors of Commerce. From a rail carrier standpoint, freight commerce is of two kinds: Local, which is traffic handled by a single railway without interchange; and intercarrier, traffic handled jointly by two or more carriers. From a geographic standpoint, it falls into two classes: Intraterritorial, that wholly within a given rate territory or district; and interterritorial, that between two rate territories, districts or regions.

12. Local Commerce. Local commerce handled by a single railway produced less than one third of the total rail revenues in the case of all commodities; one half in the case of Rough Material, grain and live animals, and one fifth of the other traffics. About one third of the water tonnage consisted of port to port traffic.

* Cities of more than 100 thousand population and their respective metropolitan areas, rural and urban.




DISTRIBUTION OF RAIL REVENUES - 1932



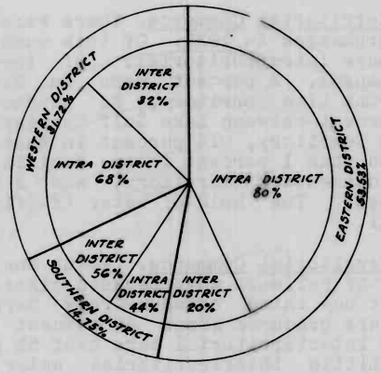
13. Intercarrier Commerce. The intercarrier commerce produced 70 percent of the rail revenue, 55 percent accruing to the originating and terminating lines, and 14 percent to the intermediate lines.

14. Intraterritorial Commerce. There were approximately 30 million interchanges in 1932. Of this number, 23 million or 76 percent were intraterritorial. Of these intraterritorial interchanges, 3 percent were in New England, 27 percent in Trunk Line Territory, 31 percent in Central Territory, 3 percent between Lake Gulf Carriers,* 6 percent in Southeastern Territory, 14 percent in Western Trunk Line Territory, less than 1 percent in the Pacific Northwest, 12 percent in Southwestern Territory, and 3 percent in the Pacific Southwest. The bulk of water traffic reported was intraterritorial.

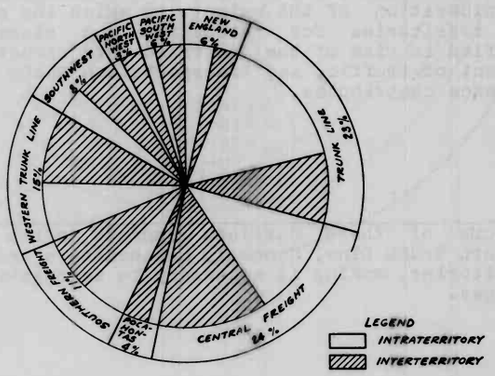
15. Interterritorial Commerce. About one fourth of all cars originated by railways move between classification districts and about one third between rate territories. The interdistrict cars produced about 40 percent of the rail revenue and the interterritorial cars over 55 percent of the rail revenue. Little interterritorial water traffic was reported due in part to omission of private petroleum tanker operations, the bulk of which moved interterritorially.

16. National Commerce. The growth and development of the country have resulted in a national commerce in which interterritorial traffic has become dominant making necessary reconsideration of the extent to which the present artificial territories for ratemaking and classification are justified in view of the distorted rate structures, sluggish movement of traffic, and transportation waste to which their existence contributes.

* Some of these carriers operate north and south in Western Trunk Line, Central, Southeastern and Southwestern Territories, making it necessary to segregate their interchanges.




REVENUE DISTRIBUTION OF RAILWAY TRAFFIC BETWEEN DISTRICTS
DECEMBER 13, 1933.




REVENUE DISTRIBUTION OF RAILWAY TRAFFIC BETWEEN TERRITORIES
DECEMBER 13, 1933.

# THE SERVICE

## VI ELEMENTS OF TRANSPORTATION SERVICE

17. Definition. The replies of the shippers to the questionnaires sent them show that the factors of service which attract their carload traffic in order of importance are speed, completeness, schedule correlation and adaptness. These are largely the same factors which the shippers of merchandise also stressed. That they are of importance is evidenced by the tendency of shippers to provide their own transportation - a tendency which can only be arrested by an improvement in common carrier service.

## VII TRANSPORTATION SPEED

18. Basis. The demand of the shippers for faster service is due not only to the speeding up of all processes of civilization, but also to the fact that speedy service is dependable, certain service, the latter attribute being a by-product of the alertness, attention and effort necessary to effect the former.

19. Determinative Factors. The factors which determine the speed of a movement are: The time necessary to effect collection or delivery in the terminal; the frequency with which schedules are operated; and the speed at which the vehicle is operated upon the road. At present the motor vehicle, due to greater freedom of movement, generally affords much quicker means of collection and delivery than the rail switch engine. It also possesses decided advantages on the road in that being a single operating unit, it does not require assemblage and break-up service at intermediate yards, as do the train units. On the other hand, the railroad's private right of way affords it the opportunity to operate at road speeds much greater than are possible on a public highway - an opportunity rarely realized when full tonnage trains are operated.

20. Present Speeds. The highway motor vehicle at present provides the speediest overall land transportation - on the whole averaging over 15 miles per hour between consignor and consignee, compared with 5 miles per hour by railway, 3 to 10 miles per hour by waterways and 1 to 5 miles per hour by pipe lines. The relatively poor showing of the rail carriers was due in part to low speed limits imposed on

train crews, partly to agreements limiting time of competitive service, but chiefly to the fact that over two thirds of the carrier time is consumed in terminals and yards, reducing the average road speed of 16 miles per hour to an overall speed of 5 miles per hour. These terminal delays were due to the time consumed in assembling trains, to long waits because of infrequent service, to reclassification en route at intermediate yards and to interchanges between carriers.

21. Potential Speed. The potential ability of the railway to move freight on the road at speeds much in excess of those possible by other land agencies will prove of little practical value until terminal delays are eliminated or drastically reduced. This can be accomplished in part by the operation of short trains upon more frequent schedules (provided economical units therefor are developed); by motorizing terminals in many cases; by unifying terminals; by reducing multifarious routing; and by cooperative routing and scheduling of intercarrier trains.

22. Effect of Speedy Service. Returns to the shipper questionnaire indicate that in 1933, tonnage equal to nearly one sixth of the entire rail tonnage in that year moved by highway, in part because of speedier service.

## VIII COMPLETENESS OF TRANSPORTATION SERVICE

23. Nature and Basis. Complete service carries the implication that the shipment will be received from the consignor at his door and delivered to the consignee at the latter's door. The issue has been so alive in the recent past with respect to merchandise or l.c.l. traffic that there is a possibility that its importance will be overlooked in the case of carload traffic. To render complete service, the carrier's transport facilities - water dock, rail track or branch pipe line - must extend to the patron's door, or the goods must be transferred between the premises of the patron and those of the carrier. Prior to the development of the motor truck as a freight transport agency, complete carrier service was largely confined to operations of the former type.

24. Present Service. Actual data as to the extent to which delivery (origin or destination) is afforded by water carriers were not obtained. The data indicate, however, that a considerable volume of the water traffic originates or terminates on rail lines. Pipe lines collect crude petroleum by means of gathering lines which tap producing wells and almost universally deliver the product directly to the refineries or to rail tank cars or to tankers for



ultimate delivery. The motor truck also renders a practically universal collection and delivery service. The rail carriers in 1932 originated about 88 percent of their carloads on industry tracks and terminated about 77 percent upon such tracks. The remainder of the cars were originated on public tracks (house or team) which necessitated that the patron, at his own expense, transfer and dray the freight between the track and his place of business.

Rail carload collection and delivery is rendered with respect to over 80 percent of all traffic. In the case of some commodities, however, it is afforded on less than half, and on others on less than 60 percent of the total. On the whole, the service is much more generally accorded the processing agency than is accorded the original producers or the small retailer; the resulting discrimination costs these shippers on the average an amount equal to nearly one fifth the freight charges.

25. Potential Service. Removal of the handicap, under which rail and water carriers labor because of an incomplete service, is now possible. In another connection the possibilities of the substitution of containers for the present box cars is discussed at some length. Through the use of such containers, the rail or water carriers can effect complete service in many cases at no more, and frequently for less cost, than is now entailed in effecting industry track deliveries. In cases where the containers are not used, the railway, through concentration of loads, can provide the drayage and transfer at an average cost per ton considerably below the cost now borne by the patrons.

26. Effect of Complete Service. Returns to the shipper questionnaire indicate that a substantial carlot tonnage of relatively high grade is now moving by highway on account of the complete service offered by that agency.

## IX SCHEDULE CORRELATION

27. Demand. An element of transport service which directly affects its utility to the patron is the degree to which its movement schedules are correlated to the patron's production or business needs. This correlation is of importance in three respects: The frequency of the schedules; the time or times of day at which they are operated; and their dependability. Its effect upon the value of the transport service lies primarily in speed and economy, as well as convenience in coordinating the two operations. To attain the former, the patron may, and frequently must, sacrifice either his own convenience or economy of operation. Attainment of the latter may result in delay in the time of movement.

28. Present Schedules. Present rail and water schedules are relatively infrequent, due to the fact that many sales units are assembled into a single transportation unit for movement, whereas in the case of highway truck lot operation the sales and transportation unit can be synchronized.

29. Potential Service. Potentially, of course, the railroad has the same degree of flexibility as the motor truck. A single car can be run from the door of the consignor to that of the consignee - in fact it has been done. Basically, a truck load can be operated as economically on the rails as on the highway, perhaps more so. Because it may not be economical to operate single cars, however, it does not mean that hundred-car trains are necessarily the most economical. The question of the relative costs of operating short and long trains will be discussed in some detail in a later connection. It will suffice to point out at this time, that the overall cost per car mile of operating the average high-speed express train, consisting only of head end equipment, is no greater than the cost per car mile of operating the average freight train. This fact points to a possible solution - the operation either of more and shorter trains, or of short follow-up trains to supplement and perhaps overtake the longer and regularly scheduled trains.

30. Effect of Correlation. The shippers of over 10 percent of the tonnage reported that they used the highway because of the ability to get more dependable service, and the shippers of over 12 percent because of more convenient or flexible schedules. In the first case, the ratio of the highway tonnage to the total was 80 percent greater than the average, and in the other, 100 percent greater. These shippers were found principally among those industries where transportation must function as a part of the business - mines, paper mills, packing plants, textile mills, refineries and handlers of iron and steel articles. It should be pointed out also that the highway tonnage of these shippers aggregated in the first case 19 percent and in the other 25 percent of the total highway tonnage reported by all shippers, indicating that in the neighborhood of 50 million tons are moving by highway partly on this account.

## X ADAPTNESS

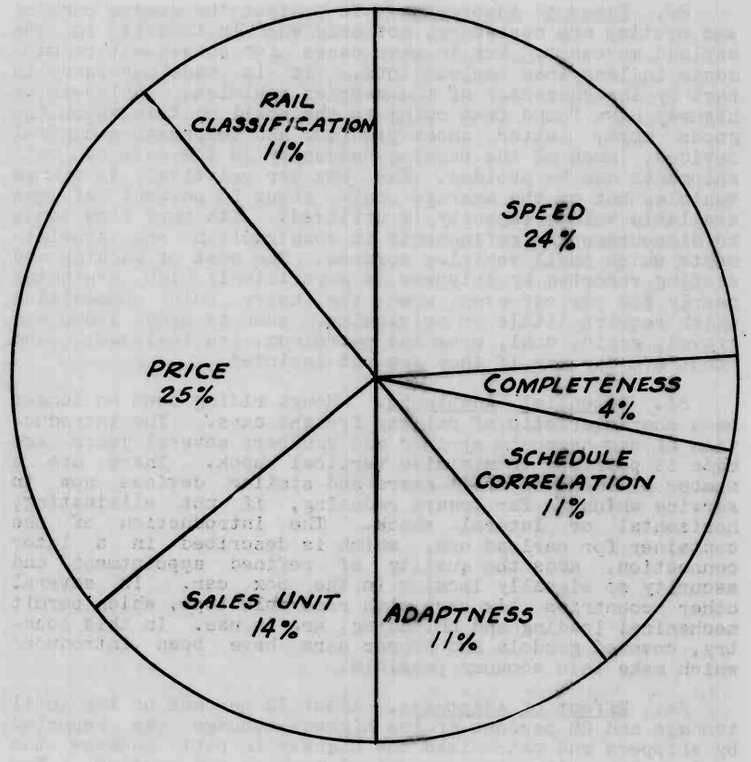
31. Nature and Demand. The word "adaptness" is used to describe the ability of carrier equipment to transport freight safely and securely, with a minimum expenditure of time and money upon the part of the shipper in preparing it for and protecting it during shipment. Concretely, it means equipment which reduces: The need for packing and crating by being shock-proof; the need for protection against temperature by having efficient heating and cooling devices; and the need for undue expense in loading and unloading by being designed to facilitate the mechanization of those operations in every possible way.



32. Present Adaptness. To protect the goods, packing and crating are necessary, not only when in transit in the carload movement, but in many cases for subsequent reshipments in less than carload lots. It is made necessary in part by the character of the carrier vehicles. Shippers by highway have found that owing to the small unit in which the goods move, better shock-proofing and temperature-control devices, much of the packing necessary in the case of rail shipments can be avoided. The box car relatively is a huge vehicle, but on the average only about 50 percent of the available volume capacity is utilized. Its very size tends to discourage the refinements in construction and appointments which small vehicles possess. The cost of packing and crating reported by shippers is surprisingly high, averaging nearly $50 per car even when the heavy bulk commodities which require little or no packing, such as sand, stone and gravel, grain, coal, ores and petroleum, are included; and about $70 per car if they are not included.

33. Potential Adaptness. Rough riding need no longer be a characteristic of railway freight cars. The introduction of non-harmonic springs and snubbers several years ago made it possible to minimize vertical shock. There are a number of improved draft gears and similar devices now in service which go far toward reducing, if not eliminating, horizontal or lateral shock. The introduction of the container for carload use, which is described in a later connection, adds the quality of refined appointment and security so signally lacking in the box car. In several other countries box cars with removable tops, which permit mechanical loading and unloading, are in use. In this country, covered gondola and hopper cars have been introduced which make this economy possible.

34. Effect of Adaptness. About 13 percent of the total tonnage and 28 percent of the highway tonnage was reported by shippers who patronized the highway in part because the equipment permits more economical packing and crating. The need seems to be most keenly felt by the packers, bakers, grocers, iron and steel handlers, and automotive dealers.




FACTORS WHICH INFLUENCE SHIPPER PATRONAGE

# THE CHARGES

## XI ELEMENTS OF FREIGHT CHARGES

35. Determinative Factors. Requisites of a transport price system are charges which are reasonable and non-discriminatory, encouraging the largest possible volume of profitable traffic and producing revenues adequately compensatory for the service and capital employed. The factors which go to make up such a system are: (1) Sales units which at once meet the needs of commerce and promote economical transport; (2) classification into cognate rating groups of the traffics which move; (3) a rate level which will promote the profitable movement of goods; (4) a rate structure devoid of preference and designed to encourage the movement of particular traffic by the agency or agencies which can handle it most serviceably and efficiently; and (5) tariffs which simply and concisely publicize as well as fix the prices.

36. Reorganization. The present system of freight charges was evolved during a period when the railroad furnished the chief, and for many purposes the only, form of land transportation. Keen competition between railroads prevented this situation from becoming a monopoly in the true sense of that word. The rates which developed before the era of public regulation were based upon what the railroads could get or "what the traffic would bear". Little attention was given to the cost of providing any particular service since only the aggregate costs were known or considered.

Public regulation improved the situation greatly and made the rate structure a more orderly, stable and dependable affair. The basic characteristic, however, of the value of the service system persisted, the reasonableness of rates being tested by comparison with other rates and competition being recognized as a justification for differences in rates, which otherwise could not be justified.

A development whereby shippers were enabled to provide their own transportation by means of pipe lines, tank vessels, and still more recently by motor truck, has brought cost into the foreground of transport pricing. That no one who is sane and free will pay more indefinitely for carrier transport than the cost of providing his own transportation is self-evident. Whether regulated or not, the prices

charged by highway or waterway operators, as well as by railways, inevitably will be limited to what it costs the shipper to provide his own service as a ceiling, and what it costs the carrier to furnish it as a basement. This condition will and should have a profound effect upon carrier pricing.

The principle of non-discrimination demands that the cost of the service be given greater recognition along with the value of the service as a basis of ratemaking. This in time will require a basic reorganization of the charge system.

Many of the changes which are indicated can be made quickly without disturbance of commerce or business. Others which affect vital and long standing business relationships must come more gradually but in full recognition of the fact that these disturbances of commercial relations, in large measure, already have been brought about by the advent of the new transport agencies, and wholly independently of any formal change in the rate system.

## XII FREIGHT TRAFFIC SALES UNIT

37. Requirements. Economic and industrial development within recent years has resulted generally in the unit in which manufactured materials are traded becoming much smaller in size, with the result that the shipper is constantly seeking smaller transportation sales units for semiprocessed and processed products. On the other hand, the development of large scale operations and the concentration of industry have resulted in the opposite tendency with respect to basic raw materials, requiring that such materials be transported in large cargo capacity lots in order to attain regularity and economy in movement.

38. Present Sales Unit. The present carrier sales unit is the hundredweight coupled with the minimum weight, which will be charged in cases where a single vehicle is required for the shipment. The tendency has been to gradually increase the size and capacity of rail equipment, without attaining a corresponding increase in the average load of cars.

A large number of shippers are using the highway because it enables them to ship in loads of from one fifth to one third the corresponding load which must be shipped by rail. Present rail and water carlot carriers generally fail to provide equipment for shipments intermediate between the less than carload shipment and the full carload shipment, while rail and highway carriers in general do not provide vehicles or means for the cargo transportation of bulk commodities.



39. Modern Sales Unit. The data indicate that the carlot sales unit which will best meet the requirements of shippers of manufactures is one averaging about 500 cubic feet and 10 tons. This demand can be met by containers which will permit the movement of commodities at no substantial increase in cost to the transportation agencies for the movement. These containers should be interchangeable between rail, water and highway carriers. In lieu of the system of minimum weights, rates should vary in accordance with the size of the shipment. On the other hand larger equipment for the handling of basic materials in much greater quantity and in cargo lots should be provided by the railways which, to be attractive, must be supplemented by a system of cargo or train load rates.

The program for the change from box car to container should be designed to meet this demand gradually, and should be directed first to those commodity groups in which it is felt most keenly, such as for instance, fresh milk, furniture, household goods, chinaware, drugs, building materials, and fuel.

40. Effect of Modern Unit. It appears that freight aggregating in the neighborhood of 75 million tons per year and consisting principally of processed or manufactured materials is now being moved by highway in part, because of the lower minimum weights which are available when that agency is used.

It is impossible to do more than to approximate the extent to which the cargo shipments of petroleum, grain, coal, lumber, ores, perishables, etc., would move by rail. Out of a total available tonnage of 241 million tons of petroleum and its products handled in 1932 by all carriers, an amount equal to over one third the total rail tonnage, in excess of 150 million tons, was handled in cargo lots, for which the railways had no tariffs.

## XIII FREIGHT COMMODITY CLASSIFICATION

41. Purpose. Necessity for classification or grouping of commodities for ratemaking purposes arises out of the fact that it is not feasible for many reasons to construct a separate rate system for each of the 5,000 commodities which move in commerce. The carrier pricing function has a two-fold purpose: To adjust the prices between different kinds of traffic in order to encourage the maximum movement of profitable traffic; and to adjust prices between commodities themselves in accordance with their respective characteristics which affect the cost to the carrier in handling them.

Volume is an important factor contributing to the determination of unit costs. To the extent that the volume of low grade commodities is increased by lower rates, reductions in the relatively higher rates on other commodities, are made possible by the decrease in unit costs resulting from the increase in aggregate volume. This practice, generally termed the "value of the service" principle, must, however, be kept in narrower limits than formerly, owing to the ability of the shipper to provide his own transportation.

Characteristics of different traffics which affect costs are the density of the commodity, the risk of loss and damage in its handling, and the special services required for its transportation. It is possible to define clearly the principles to be followed in classifying commodities in accordance with value or those which should be controlling in relating rates to cost. Clear and definite rules, however, are impossible when the attempt is made to classify articles in accordance with both the value and the cost principles at one and the same time.

42. Load. Vehicle loading affects a carrier's cost because its movement expense varies with gross and not with net load; that is, the cost of handling a net ton of freight in a given vehicle, such as a car, varies in direct relation not with the number of net tons hauled, but with the number of gross tons hauled, i.e., the tons of the car and contents. Vehicle loading in turn depends upon two wholly dissimilar variables, one voluntary, the quantity which the shipper elects to load; and the other involuntary, the quantity which the density (weight per cubic foot) of the particular commodity permits to be contained in the vehicle space. The latter variable is one which can be separately evaluated, if it were necessary, for each of the 5,000 commodities. The former cannot be evaluated as a classification element, save by the makeshift of "minimum weights". Determination of this element in the classification becomes unnecessary if in connection with the rate structure, the rates for any commodity or group of commodities are calculated in terms of gross weight although expressed in terms of net weight. By the simple expedient of making the rate per net ton vary with the gross tons, loading, both voluntary and involuntary is automatically evaluated with respect to each shipment, making it possible to eliminate all questions of density and minimum weights from the classification process.

43. Risk. The element of risk of loss or damage to the freight looms large in many classification controversies but apparently is actually of small importance. It is a factor capable of fairly exact appraisal, although as yet the statistics necessary to that end are not reported. Aggregate payments for loss and damage on account of rail carload shipments amounted to a little over 1/2 of 1 percent of the



total freight revenues. The highest ratio was in the case of perishable traffic, somewhat more than 3 percent of the revenues. There is little need to confuse this factor as an element of classification. It ought to be treated for what it is - insurance against risks ordinarily incident to transportation. This can be accomplished in one, or perhaps a combination, of two methods. It can be ignored and treated as a common overhead of all transportation, or it can be separated from the transportation rates and priced separately as an insurance premium is priced. The present system of express rates, which treats the element as a common overhead up to a certain value and as an accessory premium beyond that value, is an illustration of the combination method.

44. Special Service. The problem here is somewhat, but not greatly, more complicated than in the case of risk. These special services rarely are universally necessary with respect to all shipments of a given commodity. Unless they are universal, there is no more reason for saddling part of the cost upon those shippers of the commodity who do not require them, than upon shippers of all other commodities. The better practice, where they are unimportant, would be to consider them as a part of the transport overhead. They should, where they are important, be priced separately. In any event they have no proper place in a classification.

45. Present Classification. Each of the three districts into which the country is divided provides separate ratings of the commodities listed in the Consolidated Classification, resulting in three classifications - Official (Eastern), Southern and Western. In addition there are State classifications, unnumerable classification exceptions and commodity rates, all of which mark departures - some quite radical - from the basic classifications.

These classifications are the outgrowth of practical experience, which is another way of saying that they are largely empirical. The items are individually treated and except in cases which are decided by the Commission, the differences in treatment are not based on reported principles, relationships, analogies or reasons, but rest upon the sound judgment of the classification committees. A detailed analysis indicates that despite the complexity of the system, present commodity charges fall into a limited number of groups, the ratings of which are encompassed within a relatively narrower spread than is apparent from an examination of the classification and rates themselves.

46. Suggested Classification. It is suggested in the classification processes that all cost elements be eliminated and the value of the service element alone be considered;

that all commodities first be classified into primary groups upon the basis of utility in order to prevent discrimination between commodities having a similar use, and to effect reasonable opportunity to mix homogeneous things, and then that these primary groups be collected into a limited number of general rating groups, substantially in accordance with the stage of processing reached in the transition from rough materials to luxuries or accessories. Each of the general rating groups and such of the primary groups as require it, should be separately rated so that the maximum volume of profitable traffic will be attracted, no traffic repelled by excessive rates, none handled at an actual loss; and that the aggregate traffic, when weighted by volume, will produce revenues sufficient to make the carrier operations profitable.

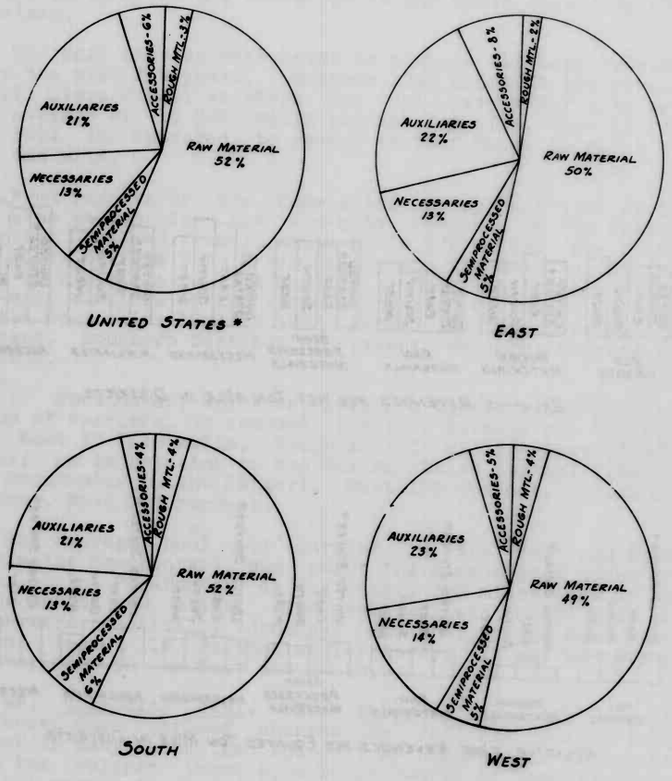
There appears to be no need to continue three separate classification rating systems, from either traffic or commercial standpoints.. With important exceptions there is little difference in the revenue results of the three classifications, and there is little, if any, difference in the distribution of the different commodities between the three classification territories.

The process of changing the classifications should be an orderly one. The first and most important step is the determination of the general rating groups and the assignment of commodities to them. As shown by analysis of 1932 revenues, there are a large number of commodities which could be readily aggregated into homogeneous groups without disturbing present relative levels. The others should be treated initially as exceptions and changed as the occasion or demand therefor arises.

## XIV PRICE LEVEL

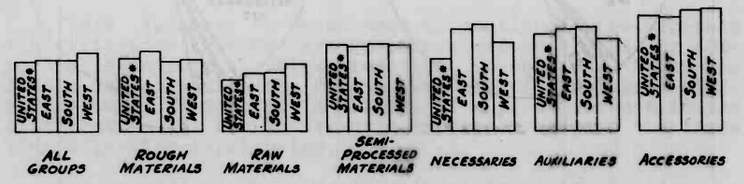
47. Definition. A rate level of a carrier or group of carriers means the average charge for the average transport service unit. It provides a measure by which the reasonableness and adequacy of the rate system, from the standpoint of the public and carrier, may be tested. On the other hand the rate level of a given commodity means the average charge for the average unit of that commodity and is a common denominator by which relative reasonableness of the general level on different commodities may be tested, but not necessarily adequacy of such charges to produce profit. The carriers have known whether their rates as a whole were profitable, but very little about the profitability of particular rates. To avoid confusion and distinguish between these two kinds of rate levels, one will be called a "carrier rate level" and the other a "commodity rate level."



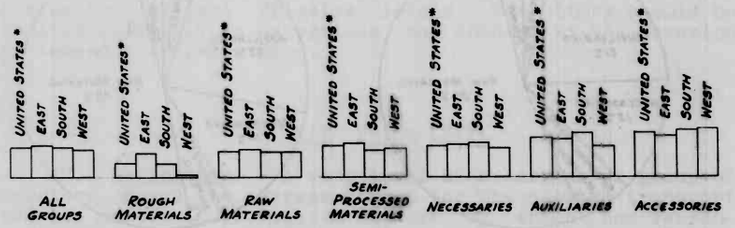



REVENUE DISTRIBUTION OF DISTRICT REVENUES AMONG GENERAL COMMODITY GROUPS-1932

* POCAHONTAS CARRIERS INCLUDED IN UNITED STATES BUT OMITTED FROM EAST AND SOUTH.




RELATIVE REVENUES PER NET TON MILE IN DISTRICTS




RELATIVE LINE REVENUES PER EQUATED TON MILE IN DISTRICTS

* POCAHONTAS CARRIERS INCLUDED IN UNITED STATES BUT OMITTED FROM EAST AND SOUTH.



48. Carrier Level. Factors which enter into a carrier rate level are its traffic volume, average load, average haul, distribution of its traffic, competition between the carrier and other carriers or agencies, and between the producers or distributors served by it and those served by other carriers.

The rail carrier rate level as a whole has been constant over the past few years. Between 1928 and 1932 the revenue of all Class I rail carriers did not vary materially from the average of 10 1/2 mills per net ton mile, but in 1933 and 1934 it appeared to recede to just under 10 mills per net ton mile.

From reports of the Commission it appears that during the same period the net ton-mile revenue of the Eastern District declined from 11 mills to 10 1/2 mills, the Southern District from 9 to 8 2/3 mills, and the Western District from 11 2/3 mills to 11 1/2 mills. The relationship of the ton-mile earnings of the three districts to those of the United States (as 100) in 1932 were: Eastern District 99 percent, Southern District 81 percent, Western District 106 percent.

If Pocahontas, which represents a distinct and peculiar group of carriers, is removed, the 1932 revenue per ton mile is: East 10 7/10 mills, South 10 6/10 mills, West 11 2/10 mills; or in relation to the United States average (including Pocahontas in the latter), East 102 percent, South 101 percent, West 107 percent.

The average haul per carrier in the East and South (excluding Pocahontas) was about the same - just under 200 miles. In Pocahontas it was nearly 300 miles and in the West about 240 miles. The average loads in the East and South were practically identical and that in the West about 4 tons less. In Pocahontas Territory, it was 50 percent greater than in the East and South.

49. Commodity Level. The shippers appear to be quite convinced that carload charges by rail are substantially higher in many cases than the cost by highway. In connection with the shipper inquiry, a large number of comparisons of typical movements by rail and highway were reported. These comparisons show that on the whole rail transport charges were over 20 percent higher and total charges 25 percent higher than comparable charges by highway, and that in some cases the rail carload rates exceeded the highway costs by nearly 100 percent. They were uniformly higher for all average hauls varying from 20 to 815 miles.

The shipper comparisons depict rail rates substantially higher than those indicated by the average of the rail carrier revenue. This in part is due to the fact that the

latter rates are weighted by much longer hauls and include a preponderant amount of intercarrier hauls, where the carrier revenue is relatively low, whereas in the shipper comparisons, local or single line hauls predominate, which produce carrier revenue relatively higher than that produced by intercarrier movements.

The railway statistics show an average rail revenue of 10 1/2 mills per ton mile, depressed by the large volume of bituminous coal, which produces a much lower ton-mile revenue than other commodities. If that commodity be excluded, the rail average ton-mile revenue rises to 12 mills. The average revenue per ton mile is lowest in the case of the Raw Material group and rises progressively with the degree of processing accorded, reaching the maximum average of 17 mills per ton mile in the case of Accessories. If the Pocahontas Carriers be excluded, there is relatively little difference in the revenue per ton mile between the three districts, either as a whole or when gauged by the six basic commodity groups. The average revenue per ton mile of water carlot carriers was about 6 mills, varying from 4 mills in the case of the Intercoastal Carriers to 14 mills in the case of the Atlantic Coastwise Carriers. The average pipe line revenue per ton mile was about 7 mills for crude petroleum and 11 mills for gasoline.

The ability of the shipper to provide his own transportation by highway limits the operation of the value of the service principle to the cost of such owner transportation, as the maximum charge which may be imposed. To ascertain the extent to which these limits are presently exceeded it is necessary to compare the level of rail commodity rates, as evidenced by the revenue which they produce, with the cost of highway transportation. Scales were constructed in order to make this comparison. The first was a mileage scale of trucking costs based upon data gathered in the highway survey. The others were a series of synthetic mileage scales, depicting the level of average rail charges as evidenced by the revenue received from important commodities. In addition, estimates were made of the percentage relation of the rates upon the particular commodity to the first class rate in the territory deemed most typical, in the case of such commodity.

Graphic comparisons of the truck costs, the synthetic charge scale and the estimated percentage relationship to the first class rate in the case of each of the twenty-seven principal commodities are shown beginning on page 41. Two truck costs are shown, one that of a fully loaded movement in each direction and the other one in which 65 percent of the return movement is deemed to be empty. These two costs are intended to approximate the ceiling of rail rates, i.e., the price beyond which the traffic will be driven to the highway.



The average of the present charges penetrates this ceiling in the case of each of the commodities shown which, in the aggregate, produced over 82 percent of the total rail revenue in 1932. The point of intersection fixes the distance below which the cost by highway is less than the average charge.

In the case of bituminous coal the point of intersection is reached at 27 miles, with anthracite coal at 40 miles, gasoline 105 miles, miscellaneous manufactures 225 miles, wheat 45 miles, citrus fruits 250 miles, fresh vegetables 205 miles, lumber 70 miles, structural material 100 miles, fresh meat 280 miles, wheat flour 75 miles, automobiles 305 miles, kine 180 miles, potatoes 200 miles, cement 80 miles, corn 65 miles, road and fuel oil 75 miles, manufactured foods 90 miles, canned goods 130 miles, ores 30 miles, swine 185 miles, sugar 80 miles, sand and gravel 20 miles, fibres 200 miles, printing paper 80 miles, furnishings 225 miles, and textiles 260 miles.

For practically all distances under 50 miles, the straight line of the synthetic scale is substantially below the curve of the percentage relationship of first class, estimated to represent the actual rates rather than the average revenues. The latter are undoubtedly lower than the actual short distance rates due to the tendency of rail rates to taper the rate of progression in the longer distances. If the curve of these percentage relationships be substituted, it is seen that the truck zone made possible by the rail rate system is much enlarged.

50. Effect. The situation depicted in the preceding section has had precisely the effect to be expected. The shippers of nearly two thirds of the tonnage by highway reported that they selected that agency in part because of the lower charges. These same ratios prevailed in practically every business group.

One outstanding fact, however, is that the shippers who assigned low cost as the cause of highway use are predominantly those dealing in processed materials. Less than 20 percent of the tonnage represented was of business groups dealing in Raw Materials. Seventy-one percent of the tonnage moving by highway was of industries dealing largely in fully processed materials. Examination of the comparisons of typical rates submitted by these shippers, as well as of the charts, indicates that generally, but with important exceptions, the trouble lies in the short distance rates on processed manufactures and that as a whole the level of the rail rates is considerably below the alternative highway cost. In other words, the maladjustment is in the structure and not in the commodity rate levels themselves.

51. Modern Level. If, as we have suggested, the value of the service basis be exclusively used in classification, there is no occasion again to consider it in connection with the rate levels. These levels should be based purely on costs for several important reasons: To insure profitable operation; to avoid competitive or cutthroat ratemaking; to eliminate all possibility of market preference or discrimination; and to avoid litigation from ratemaking.

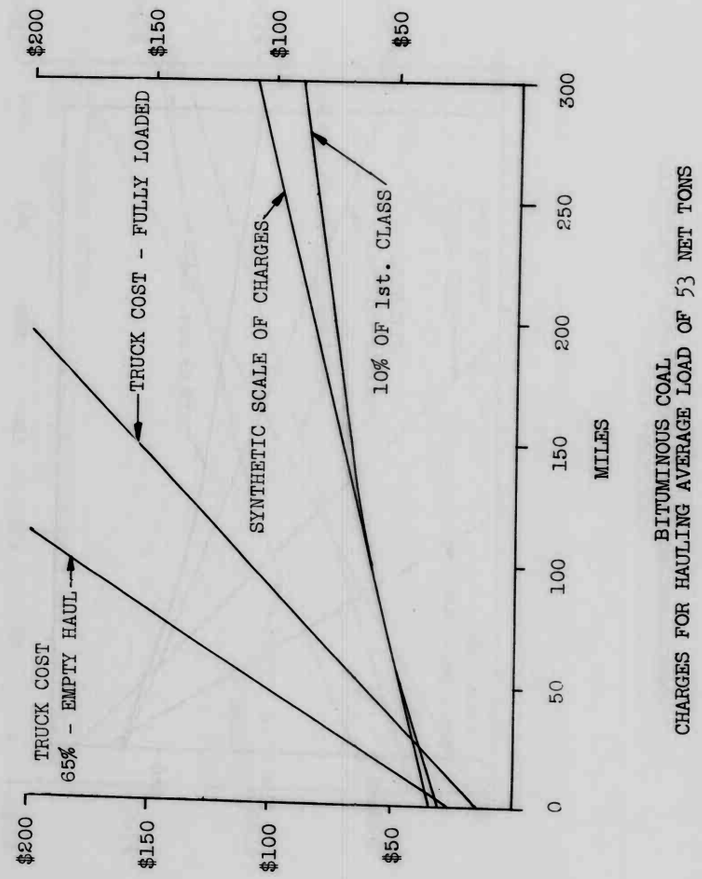
Insofar as the determination of the basic carrier level of the country as a whole or of an individual rate territory is concerned, costing can be made a relatively simple process.

The prime essential is a gross weight unit in which the transportation costs first can be calculated and then converted into net weight units. In connection with the discussion of the rate structure the suggestion is made that the "equated tons" of a shipment, i.e., the gross weight of the car and contents while under load, is such a unit. To express carrier operative costs in terms of equated tons and expand these costs to cover overhead and profit by means of operative cost ratios are simple arithmetical processes which will produce the carrier rate level. Application of the classification ratings or percentage relationships to this base unit will reveal the respective commodity rate levels.

As heretofore stated, the situation with respect to the actual rate level for the short distance is in all probability more serious than that depicted by the synthetic rate scales. This situation may be due to one or both of two factors - relative high terminal or initial rating, or too high a line rate. It is not met adequately by blindly cutting rates in particular situations and seeking to recoup revenues by general rate increases. It must be met by readjustment of the rate system to meet general conditions. The scales indicate that in most cases the present initial charges are in excess of those necessary to cover terminal cost plus profit. Since the cost of highway terminal haulage, on the average, is below that of rail terminal haulage, the cost of the latter (expanded for profit) should constitute the maximum initial charge in all cases.

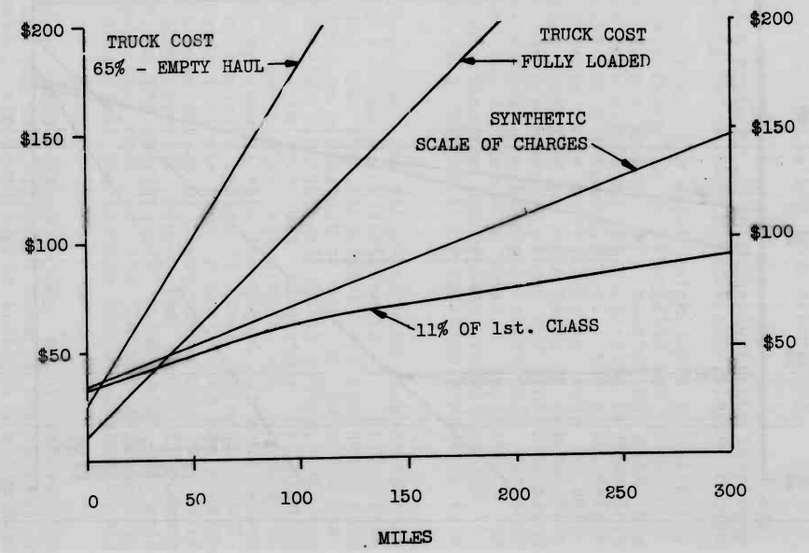
In many cases this change alone would afford the opportunity to use the most efficient form of transportation. In others, however, the level of the scale as a whole must be reduced to accomplish this end. Adjustments should not be limited to reductions, as there must be corresponding increases in the rating of other commodities in order to produce the necessary revenue, without which the service cannot be rendered. This readjustment cannot be accomplished overnight without disturbances to industry and commercial relations, which as far as practicable are to be avoided.

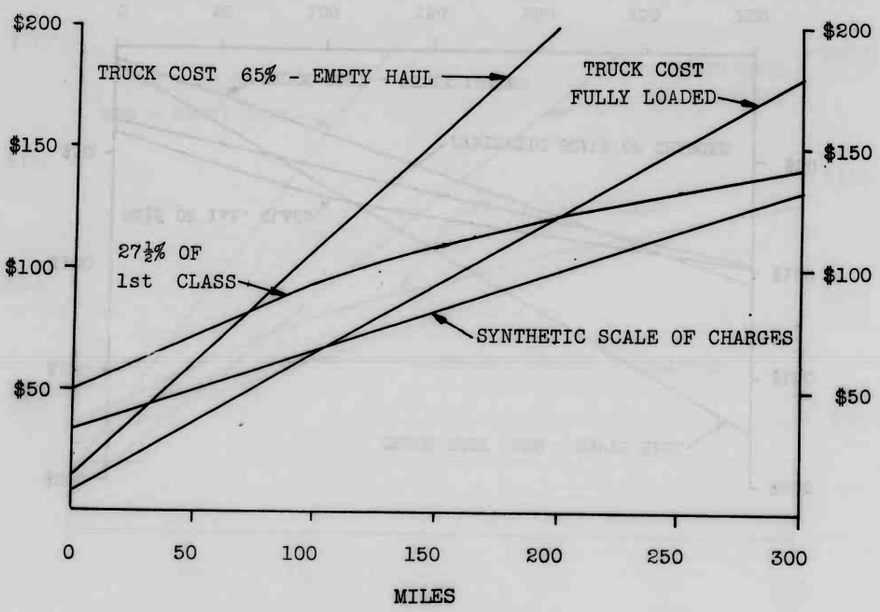





BITUMINOUS COAL
CHARGES FOR HAULING AVERAGE LOAD OF 53 NET TONS

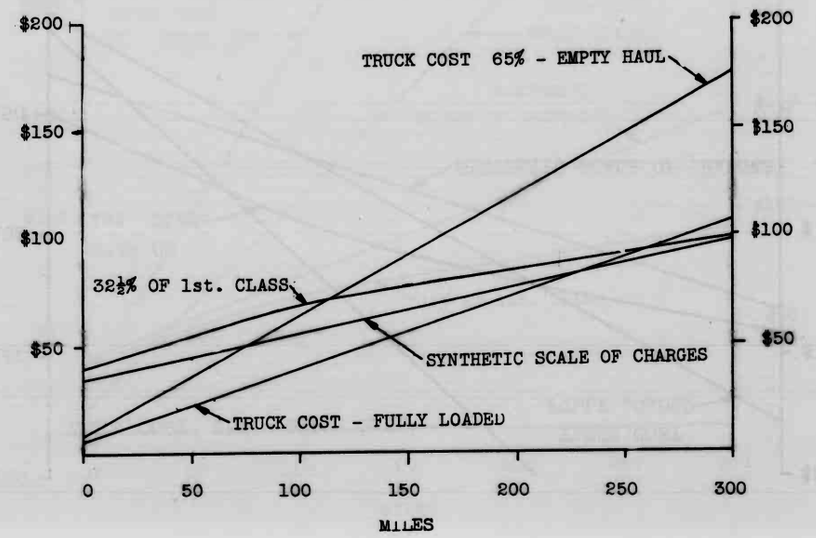
ANTHRACITE COAL
CHARGES FOR HAULING AVERAGE LOAD OF 51 NET TONS

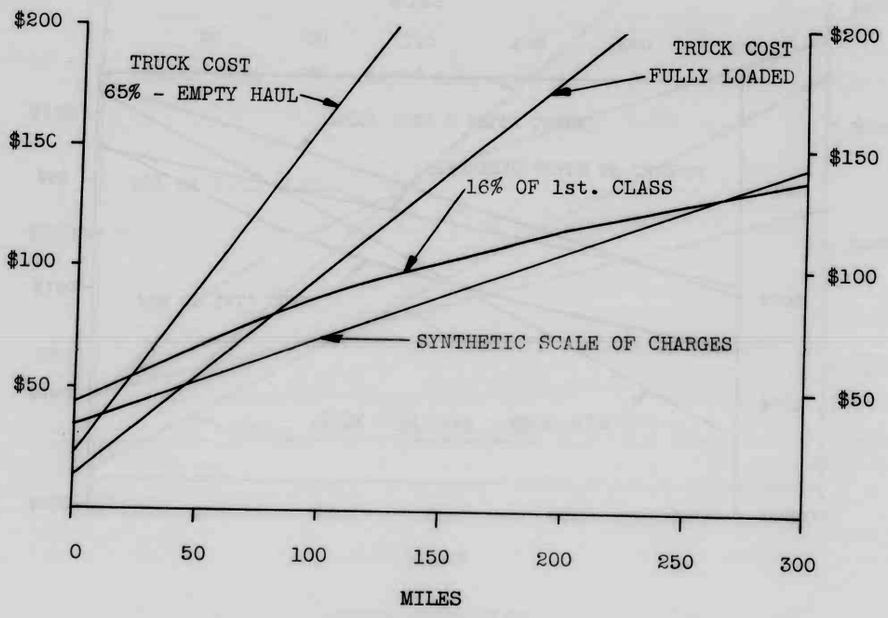



GASOLINE, ETC.
CHARGES FOR HAULING AVERAGE LOAD OF 28 NET TONS

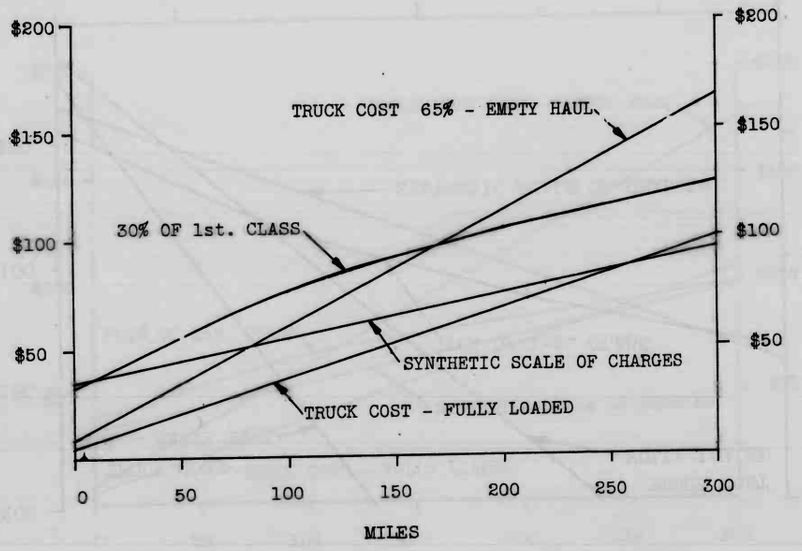
MISCELLANEOUS MANUFACTURES
CHARGES FOR HAULING AVERAGE LOAD OF 20 NET TONS

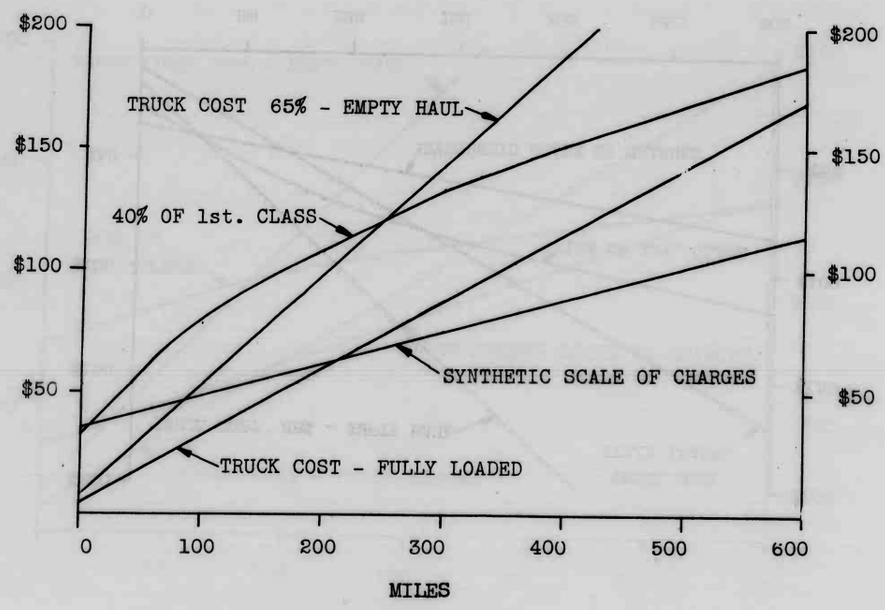



WHEAT
CHARGES FOR HAULING AVERAGE LOAD OF 44 NET TONS

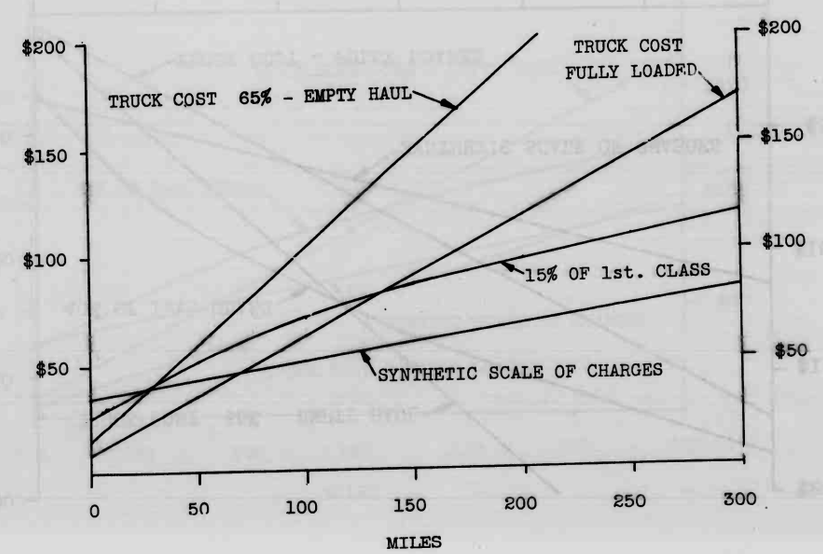
CITRUS FRUITS
CHARGES FOR HAULING AVERAGE LOAD OF 17 NET TONS

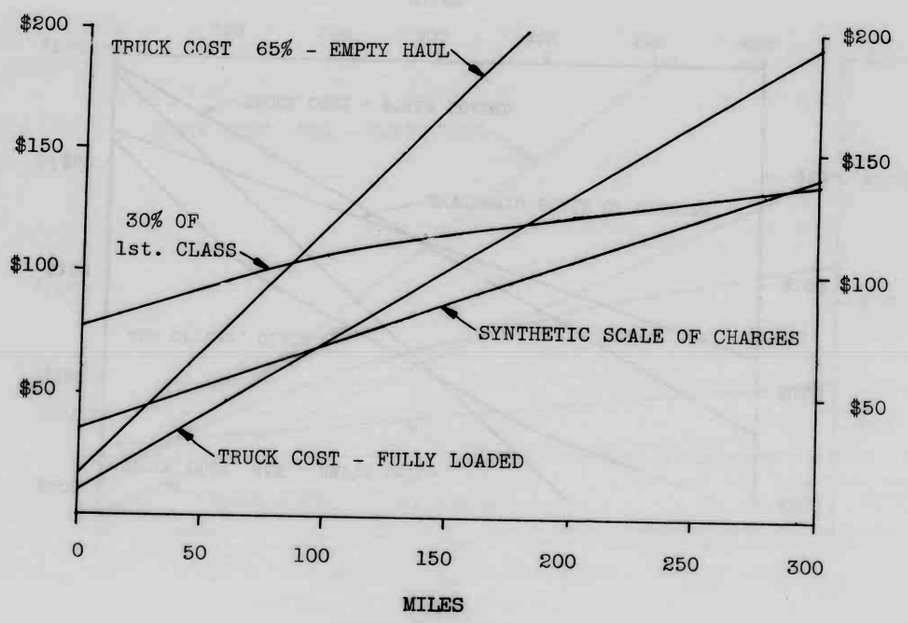



FRESH VEGETABLES
CHARGES FOR HAULING AVERAGE LOAD OF 12 NET TONS

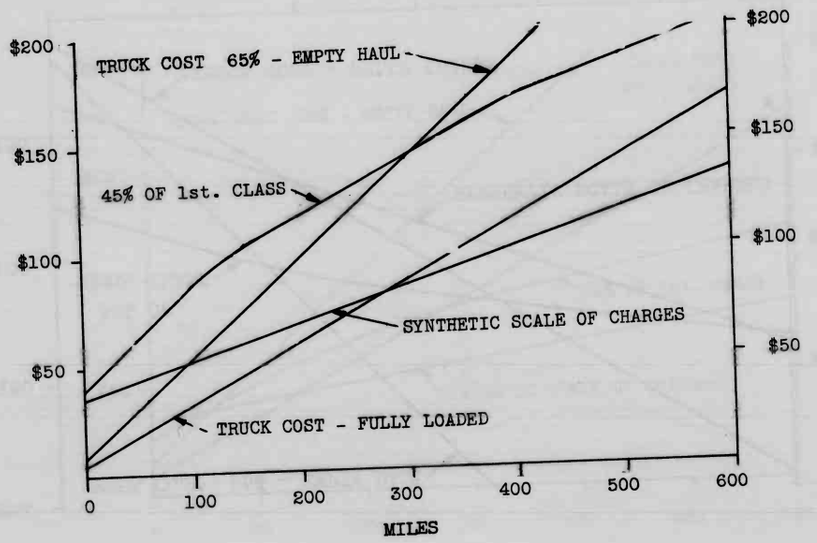
LUMBER
CHARGES FOR HAULING AVERAGE LOAD OF 26 NET TONS

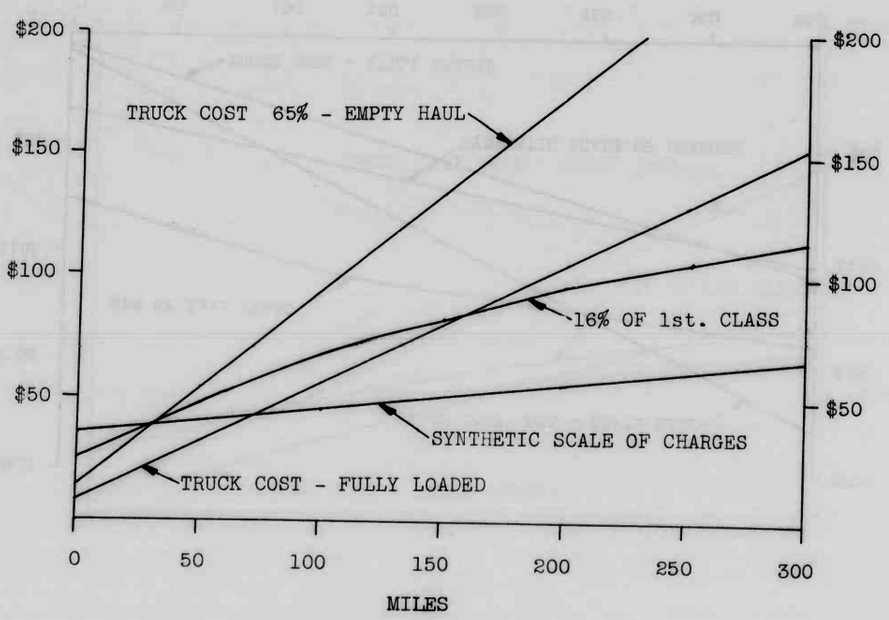



STRUCTURAL MATERIAL
CHARGES FOR HAULING AVERAGE LOAD OF 32 NET TONS

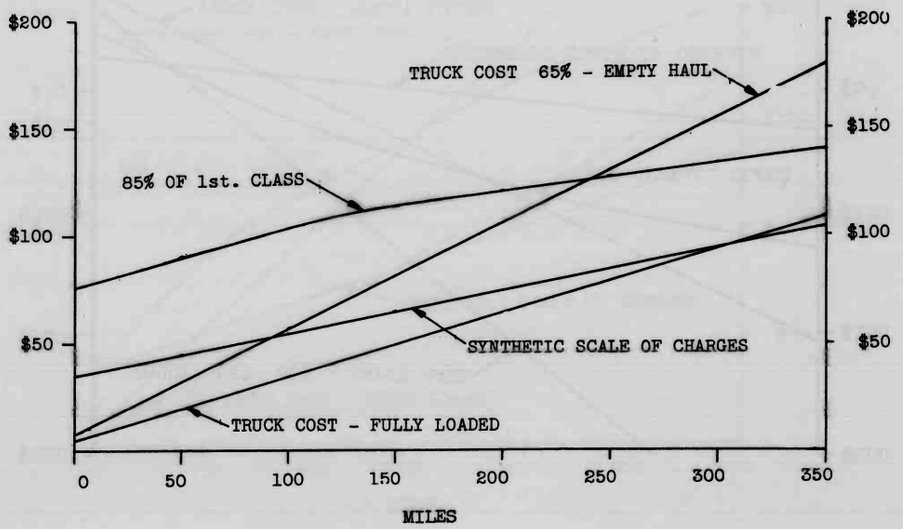
FRESH MEAT
CHARGES FOR HAULING AVERAGE LOAD OF 12 NET TONS

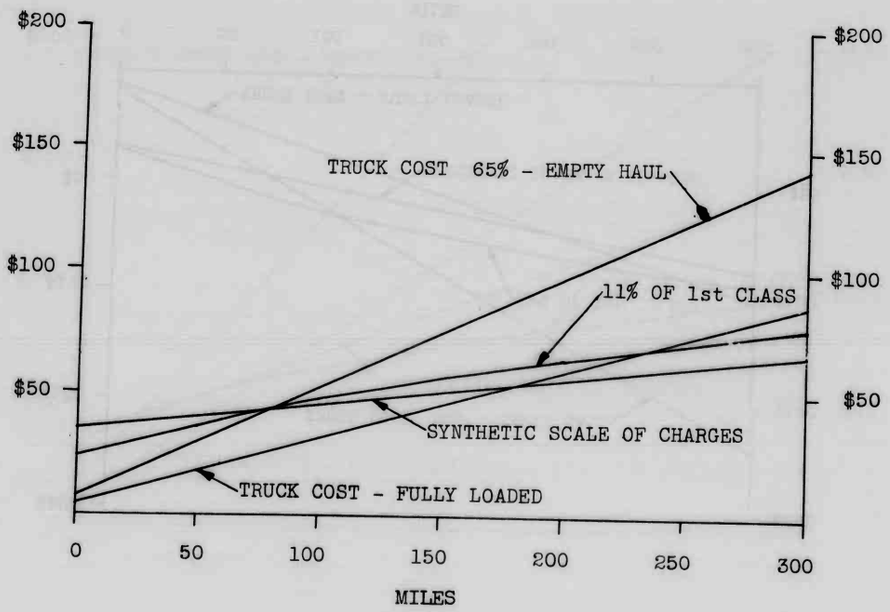



WHEAT FLOUR
CHARGES FOR HAULING AVERAGE LOAD OF 24 NET TONS

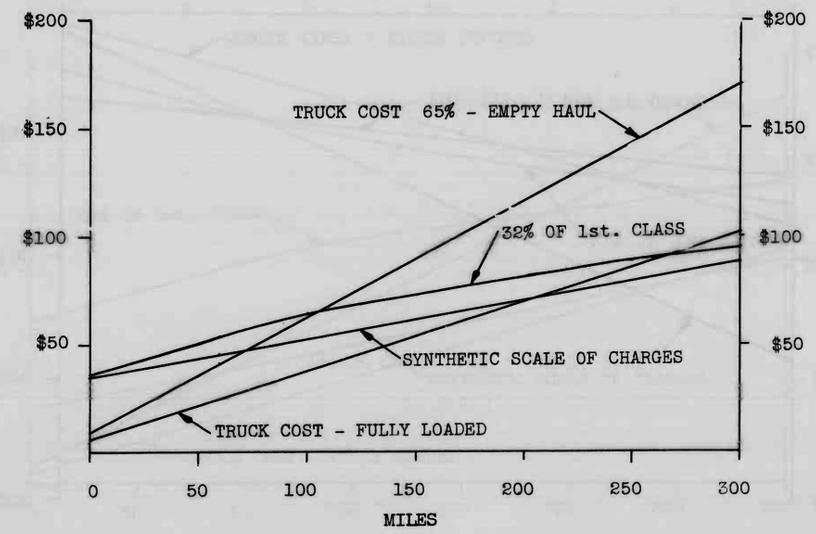
AUTOMOBILES
CHARGES FOR HAULING AVERAGE LOAD OF 15 NET TONS

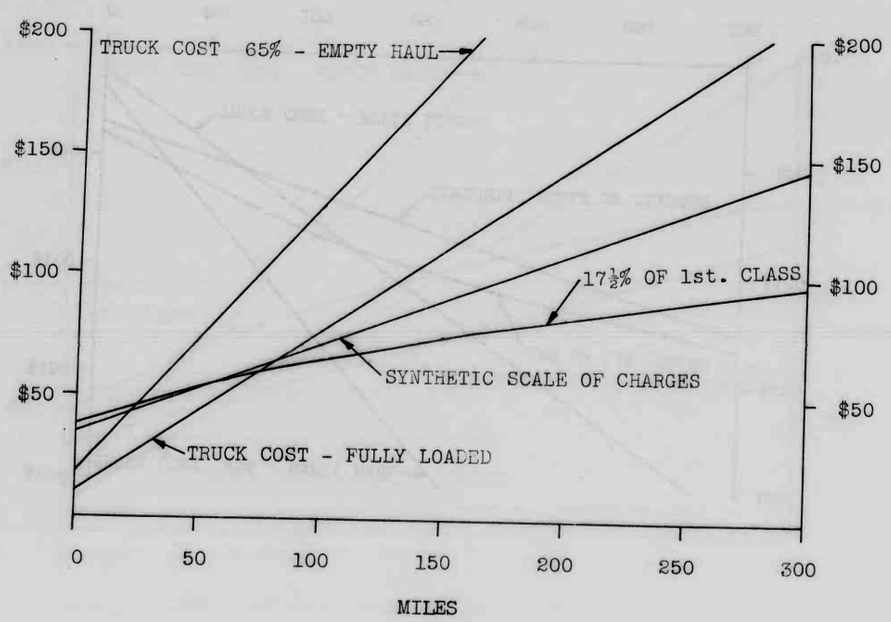



KINE
CHARGES FOR HAULING AVERAGE LOAD OF 15 NET TONS

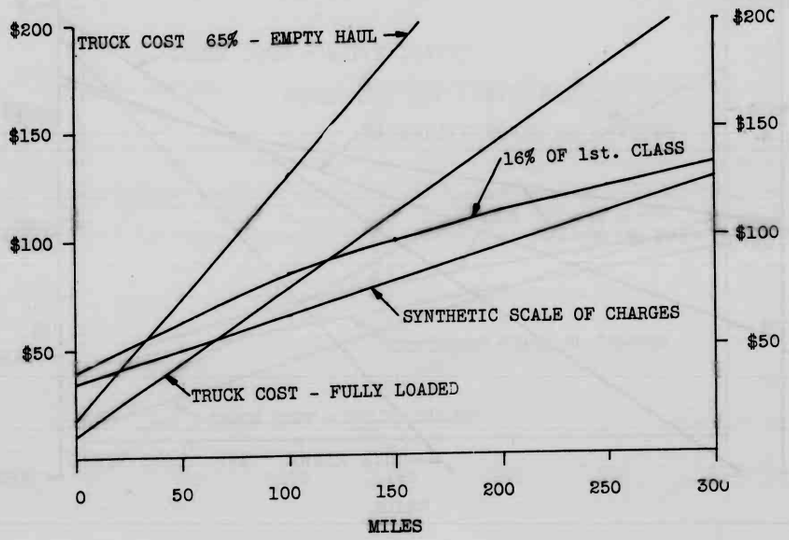
POTATOES
CHARGES FOR HAULING AVERAGE LOAD OF 18 NET TONS

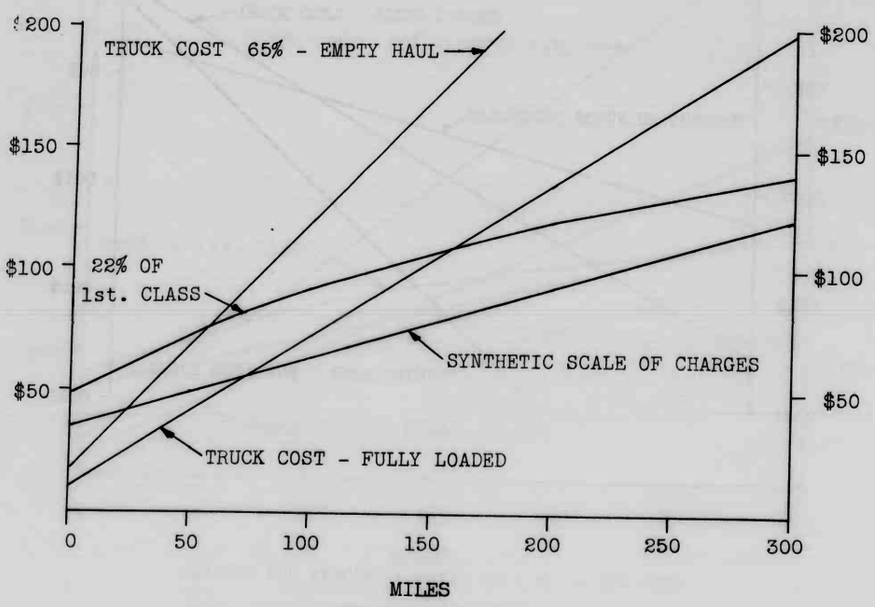



CEMENT
CHARGES FOR HAULING AVERAGE LOAD OF 39 NET TONS

CORN
CHARGES FOR HAULING AVERAGE LOAD OF 40 NET TONS

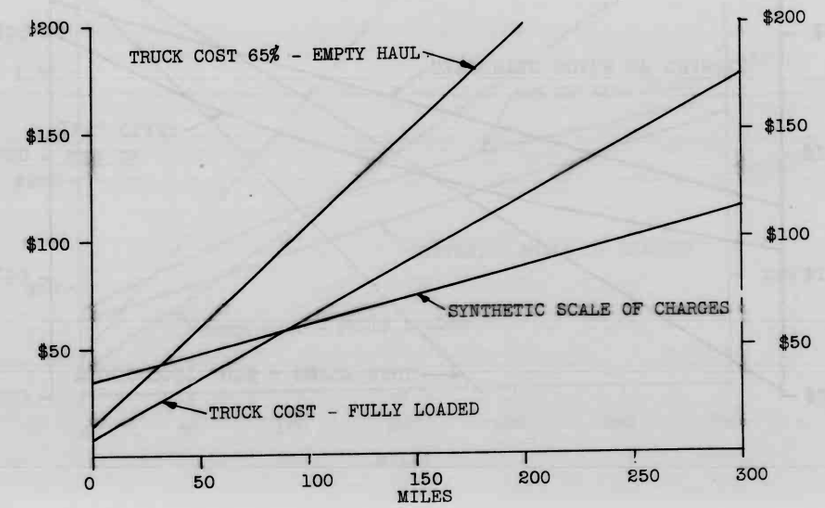


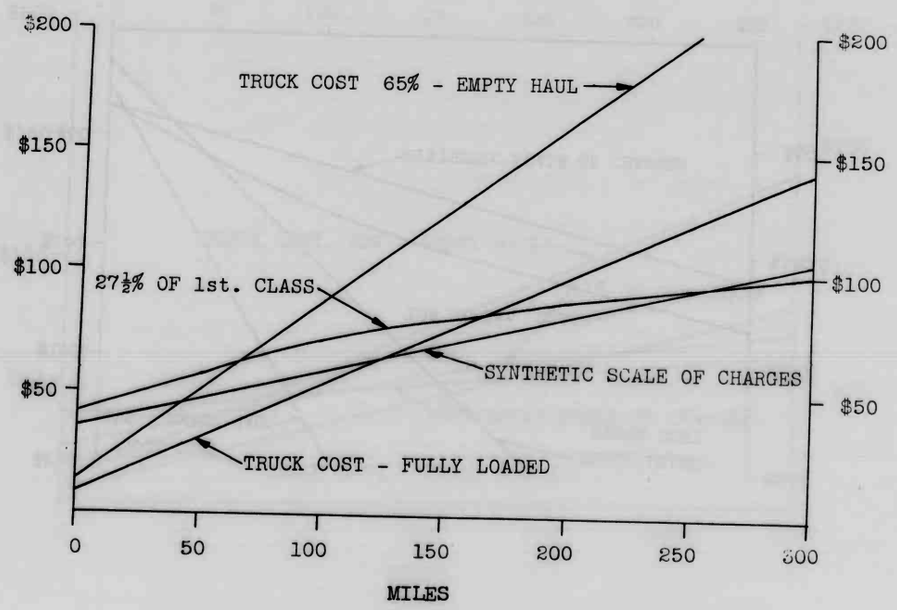




ROAD AND FUEL OIL
CHARGES FOR HAULING AVERAGE LOAD OF 34 NET TONS

MANUFACTURED FOODS

CHARGES FOR HAULING AVERAGE LOAD OF 27 NET TONS

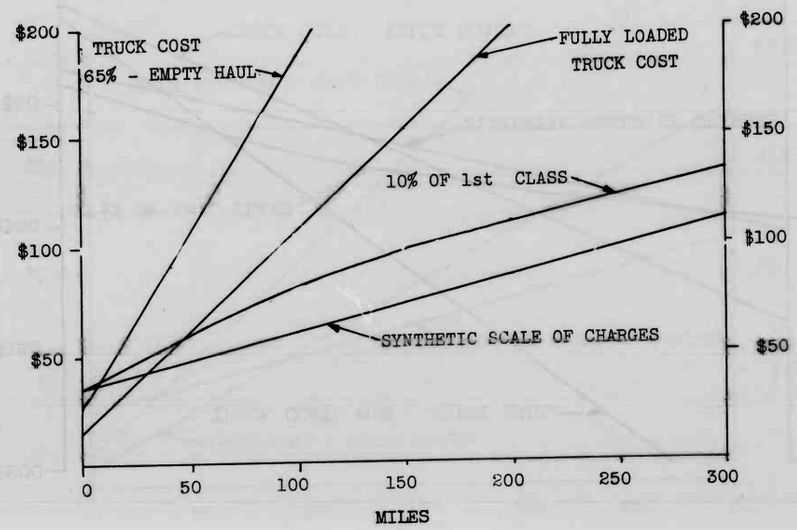


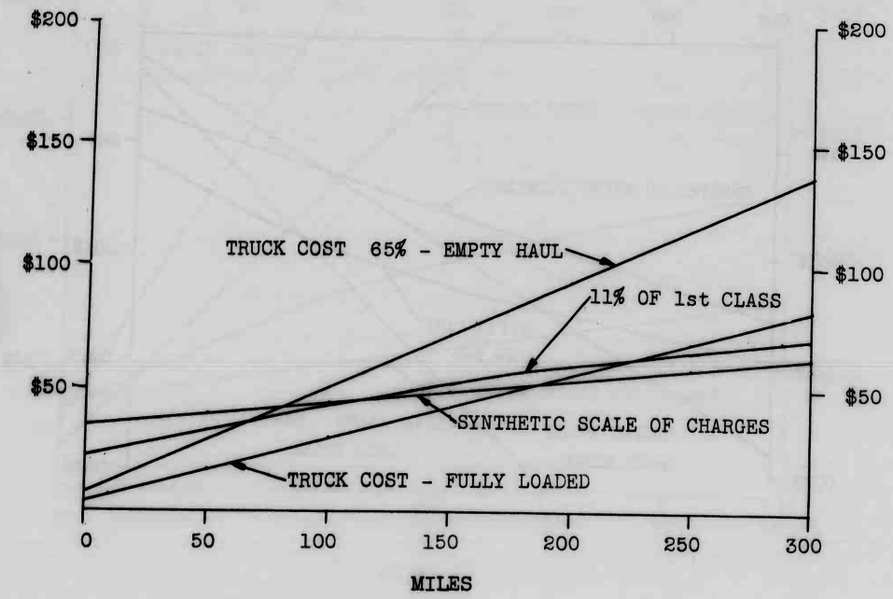




CANNED GOODS

CHARGES FOR HAULING AVERAGE LOAD OF 23 NET TONS

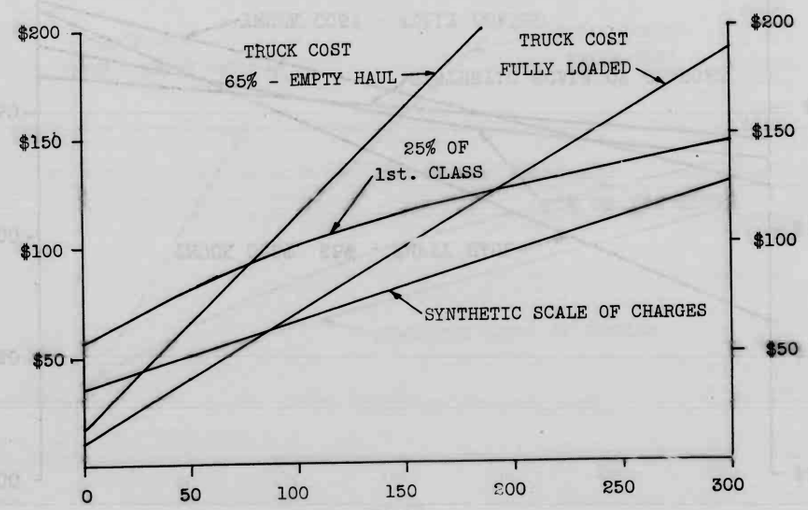
ORES
CHARGES FOR HAULING AVERAGE LOAD OF 49 NET TONS

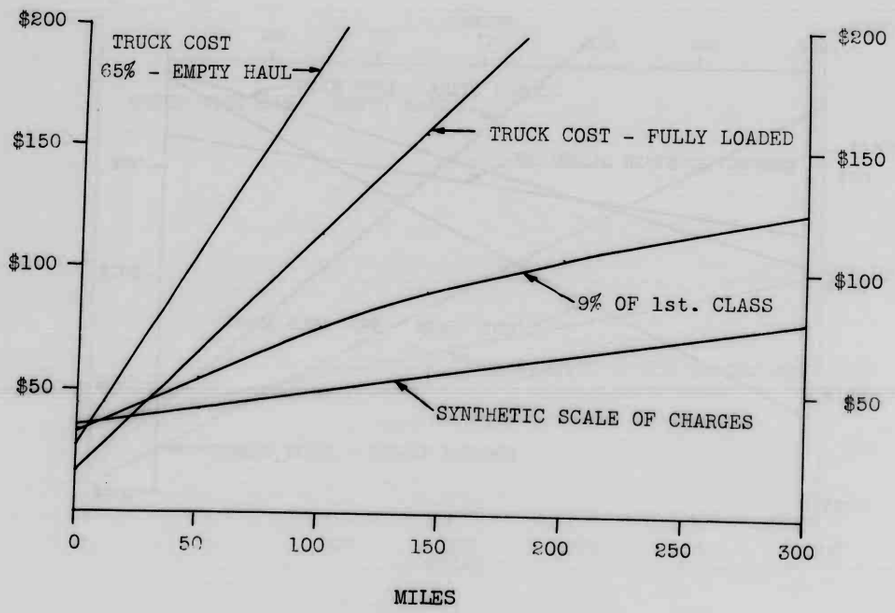



SWINE
CHARGES FOR HAULING AVERAGE LOAD OF 11 NET TONS

SUGAR
CHARGES FOR HAULING AVERAGE LOAD OF 31 NET TONS

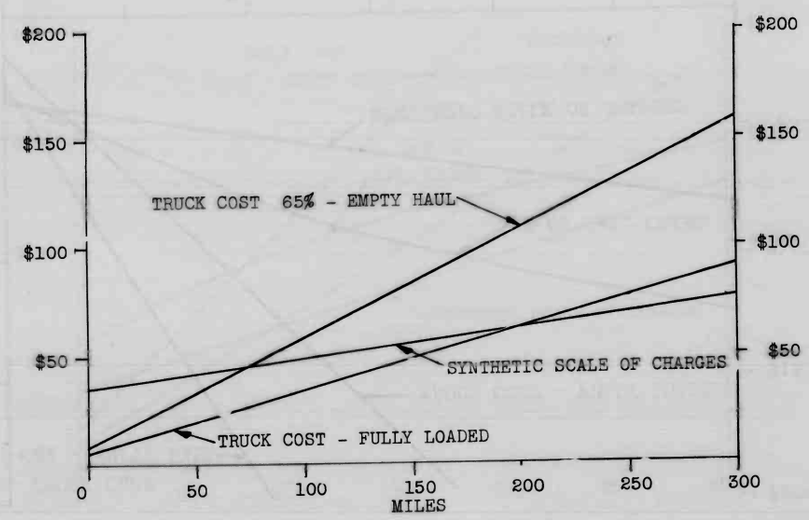


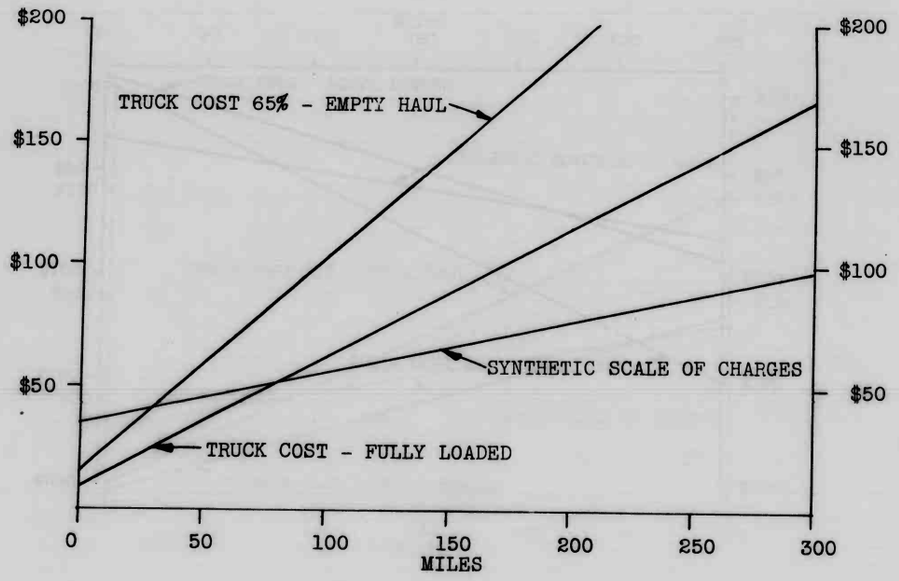




SAND AND GRAVEL
CHARGES FOR HAULING AVERAGE LOAD OF 56 NET TONS

FIBRES

CHARGES FOR HAULING AVERAGE LOAD OF 13 NET TONS



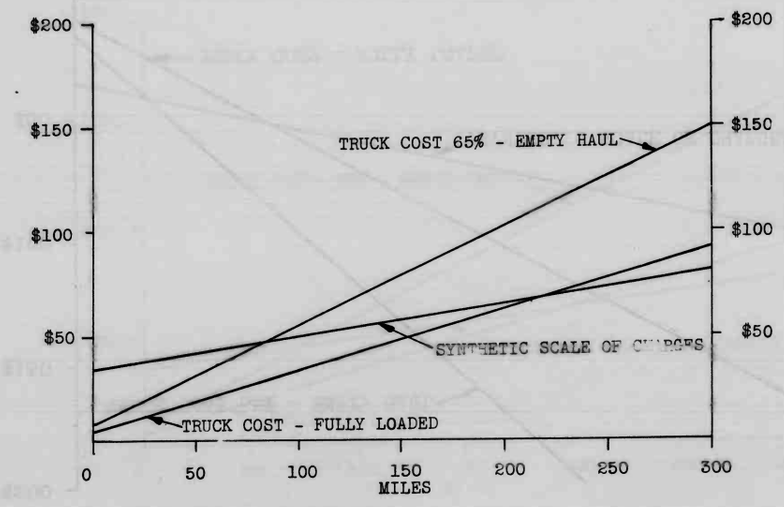



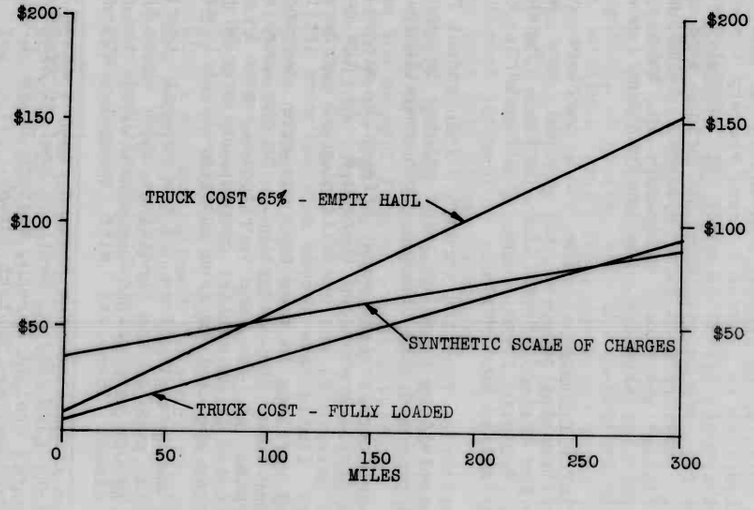

PRINTING PAPER

CHARGES FOR HAULING AVERAGE LOAD OF 25 NET TONS

FURNISHINGS

CHARGES FOR HAULING AVERAGE LOAD OF 14 NET TONS




TEXTILES

CHARGES FOR HAULING AVERAGE LOAD OF 14 NET TONS

## XV PRICE STRUCTURE

52. Definition. A rate structure broadly includes the entire system of carrier prices. Here it is used in a more restricted sense to cover the system by which rates on individual shipments are related to one another in accordance with the service required for the transportation of each. The purpose of classification is to determine the transportation burden which each commodity or group of commodities shall bear in relation to others, whereas it is the office of the rate structure to provide a means whereby the characteristics of shipments affecting costs (principally weight, bulk and distance) may be evaluated and priced more or less automatically. Under present rate systems, owing to the inclusion of "value" and "cost" principles in both classification and rate construction, the two functions generally are not clearly defined.

53. Carrier Structures. The rail carriers of the country, for ratemaking purposes, are grouped into 9 rate territories - New England, Trunk Line, Central, Pocahontas, Southeastern, Western Trunk Line, Southwestern, Pacific Northwest and Pacific Southwest.

These territories function through 7 independent freight bureaus or associations by which joint pricing is conducted and notice of proposed rate changes given competitors.*

These rate territories were originally marked by the limits of the carriers embraced therein.# As the commerce of the nation integrated and consolidation of carriers proceeded, these limits have become more and more artificial. Overlapping of carriers in more than one rate territory is the rule rather than the exception. On the average, each carrier operates in two such territories, some in as many as four. As stated in an earlier connection, over 55 percent of rail revenues are derived from interterritorial traffic.

Although the rate structure of the several territories still reflects some of the conditions under which the several carrier groups were originally constituted, the results achieved are almost identical with respect both to the

* Trunk Line Association, New England Freight Association, Central Freight Association, Southern Freight Association, Transcontinental Freight Bureau, Western Trunk Line Committee and Southwestern Freight Bureau.

\# Originally many charters and laws prohibited through rates. It required an act of Congress to make through or joint rates permissive (1866). Later (1906 and 1910) the power to compel through rates was vested in the Commission.



distribution of traffic and as to the unit revenues of the various commodity groups. For all practical purposes the average statistics of all railways as a single system fairly typify the situation in each territory.

The need for economic parity among territories for removal of the influence of market competition, for elimination of discriminations against cities and communities, and for simplification, points to the conclusion that a uniform price system applying throughout the country is worthy of the most careful consideration.

54. Commodity Structures. Originally carrier rates probably were made as individual transactions. The growth in operations and diversification of traffic, however, soon made necessary more systematic treatment. Until very recently, cost was given little or no specific consideration. It was recognized, of course, that the amount which was shipped and the distance which the goods moved ought to have some bearing on the charge - a recognition which finally resulted in a dogma which is only a half truth that the cost per mile decreased with the distance. In litigation with the States over rates, when the courts sought something more tangible than uncharted judgment by which to determine the issues, resort to cost data became necessary.

In recent years, through the gradual prescription of mileage scales by the Commission, the rate system has begun to assume the general form of a cost structure. The rates, expressed in cents per hundredweight, generally progress, but not in uniform gradation, from a fixed minimum with the distance of the movement.

No definite attempt to prescribe cost rates has been made in ratemaking because of confusion of value and cost principles. Differences in gross weight handled per car, resulting from differences in net loading, voluntary and involuntary, can be considered under the present system only by prescribing a minimum shipment for which the carrier will move the tare weight of the car, and by taking the density characteristics into account in the classification ratings. By neither of these processes can these cost characteristics be accurately evaluated.

55. Effect. The present method of constructing carrier rates has provoked widespread litigation, with the result that much of the transportation pricing is done through the media of law suits. The advent of the motor truck and the revival of water transportation have tended to aggravate the confusion. The facts indicate that the present unplanned system of pricing is responsible for the diversion of considerable traffic which, from a cost standpoint, could be more advantageously handled by the railway.

56. Modernization. The objective of a modern price structure will be a system so devised that the charges for shipments of the same commodity will vary with the characteristics which affect the carrier service and cost required, i.e., the weight, the volume, and the distance.

The effect of the characteristics of weight and distance jointly on line costs is measured by the gross ton miles required for the movement of the shipment.

The method by which this end can be accomplished is more complex in statement than it is in application. The steps in such a process may be summarized as follows: (1) The average terminal cost per equated ton, and the average line cost per equated ton mile are respectively increased by application of an operating ratio sufficient to produce a carrier profit, and the results are herein called "average rate factors"; (2) to each of these respective rate factors the rating of the particular commodity determined by the classification is applied to produce the average rate factors of that commodity; (3) since the rate factors are expressed in gross weight units, it is necessary to convert them into net weight units for pricing purposes; this can be done by applying to them the ratio of the gross load (tare weight of the car plus the average load or loads for which the scale is desired) to such net load or loads; (4) the final step is the construction of the scale by cumulatively adding for each mileage block the line rate factor to the constant terminal rate factor.

The proposal is a radical change in the method of ratemaking. Once the form of the structure is set up the present rates may be conformed to it as the occasion or the need for readjustment arises, and commercial disturbances avoided.

The desire to preserve the existing structure, however, should not be permitted to blind us to the quite general need for immediate action. The curve of the present rate scales, and of the synthetic charge scales, as well as the returns to the shipper survey, indicate that the present commodity structures are basically unsuited to present conditions and are driving long-haul carload traffic to the highway on account of price, although, as we shall hereafter see, from a cost standpoint, the rail is the cheaper instrumentality for all save very short hauls. Attempts to meet this situation piecemeal lead to large and unwarranted reductions in revenue at a time when such reductions imperil the stability of the industry and also tend to create unfair discriminations. The situation is one which does not permit further temporizing or attempts to patch a structure which the advent of other transport instrumentalities has made obsolete. Steps which are necessary to meet the situation



will unquestionably change present rate relationships or they will formally recognize changes which the new conditions have wrought.

## XVI TARIFFS

57. Purpose. The object of a tariff is primarily to advise a prospective customer of the carrier's price and secondarily to fix definitely the rates which are legally applicable for a movement. There are over 5 thousand commodities which move in carload lots. There are over 34 thousand individual points in the United States between which they can move, and over 1 thousand common carriers over which the commodities can move. The correlation of the multitude of combinations which arise out of the many variable elements to accomplish the foregoing objectives presents a problem, the chief difficulty of which lies in the avoidance of complexity upon the one hand and multiplicity upon the other.

58. Present Tariffs. There are currently on file with the Interstate Commerce Commission about 500 thousand tariffs and supplements containing about 2 1/2 million pages. During the year 1934 alone over 100 thousand tariffs were filed. Each railway issues tariffs which apply only locally on its lines and with respect to only certain named commodities. It joins with other railways in publishing joint tariffs through common agents and in many cases these common agents join with one another. It is quite generally necessary that railways participate in tariffs promulgated by the tariff agent in territories not directly served by their lines. Maintenance of a tariff file, much less a corps of experts to run it, is wholly out of the question except in large organizations - shipper or carrier. Indeed there are few if any places outside the tariff files of the Commission where anything approaching completeness is attained.

Present-day tariffs are among the most technical and complicated documents extant. The necessity for attaining the secondary objective of legal definiteness largely obscures the primary objective of publicity. The need for this condition arises entirely out of the lack of systemization - a condition difficult to attain under present conditions in view of the large number of publishing agencies including carrier local publishings.

59. Defects. The basic defects in present-day tariffs are:

(1) Confusion and multiplicity resulting from the large number of rate systems and publishing agencies;

(2) Lack of a consistent grouping of commodities into a limited number of rating groups;

(3) Lack of a consistent system of grouping shipment movements into a limited number of rate blocks or zones. If rate blocks 60 miles square (such as the equigraphic zones suggested in the supplement to the Merchandise Traffic Report) be used, all possible movements which may take place in the United States fall into less than 60 rate blocks;

(4) Failure to confine classification strictly to a "value of the service" basis and to construct rates strictly on a cost basis; and

(5) Specification of routes made necessary by large number of open routes.

60. Modernization. From the standpoint of every interest, including the carriers themselves, a single uniform transportation rate structure is demanded. All interstate rail tariffs must be filed with and if contested, approved by a single body. With a uniform rate structure there is no reason why all such tariffs, together with those of all other agencies, also cannot be published by a single publishing agency.

If extraneous cost elements, such as density and risk, be excluded and only the element of the value of the service considered, classification can be greatly reduced and simplified. Likewise the grouping of movements into uniform rate blocks or zones based upon commercial market groups is quite feasible and would result in a drastic reduction in the number of such movement groupings.

Multifarious routing should be reduced by the elimination of unnecessary and circuitous routes and the grouping of carrier routes into definite competitive channels.

With these major difficulties overcome, the tariffs covering all rates for all commodities in the United States can be simply and concisely stated within the bounds of a single volume.

The change in the tariff procedure suggested must of necessity take place over a considerable period of time. Here also the framework should precede any change. A grouping of all stations into commercial market areas in a directory is the first step, to be followed by a standard or universal system of mileage blocks or zones. As the occasion arises, all rate changes should be incorporated into the new tariff forms and the other rate structures, beginning perhaps with the class and mileage scale of rates, gradually absorbed into the system.

# THE OPERATIONS

## XVII STATISTICAL ANALYSES

61. Necessity. Whenever there are more ways than one to perform a given service, or when there exist more facilities than one, or more operators than one by which it can be performed, the need for comparative analysis of operations arises. Among needs peculiarly felt in the transportation industry because of conditions which exist today, may be named:

(1) Scientific budgeting of expense in a time of reduced traffic concurrent with the demand for improved or increased services;

(2) Comparison of the relative utility of facilities, methods and operations of a carrier, or of competing carriers;

(3) Improvement in service and reduction in expenses arising from the development of new transport facilities;

(4) Relation of prices to cost, due to the newly developed ability of the shipper to provide his own transportation; and

(5) Determination of the relative economic utility of various forms of transportation in order to design a properly coordinated system.

Heretofore, statistical analyses have been required only occasionally and it has been found convenient to obtain them by special and postfactum study. The demand now has become continuous, making a system of analysis through current routine wellnigh indispensable.

62. Factors of Utility. The economic value of a given transport agency involves consideration of the utility of the plant, operations and overhead, which are necessary to provide transportation. The activities of a transport agency, for purposes of analysis, may be grouped in accordance with three fundamental classifications:

(1) A function classification which groups transport activities in accordance with the nature of the work done, such as maintenance of plant or transportation of vehicles;

(2) A location classification which groups them in accordance with the place where the work is done, such as station, yard, road or office;

(3) A service classification which groups them in accordance with the objectives of the work done, such as receipt and delivery of freight or its line movement between terminals.

A function analysis is chiefly valuable for budgetary purposes; a location analysis for managerial control and supervision; and a service analysis for pricing and for determining the relative utility of different facilities, agencies, services, or businesses. It is impossible, however, satisfactorily to analyze or to synthesize transport operations in any one of the three classifications or from any single standpoint. Correlation for each purpose is required in practically all cases.

63. Criteria. The utility of an agency, a plant, or an operation is determined by its relative capacity to meet the service demands of commerce at a minimum expenditure of time and money. The primary purpose of accounting is to show the amount which was expended in order to determine the profitability of the enterprise. Accounting systems, including those of transport agencies, therefore, are generally bottomed upon a function analysis of revenues and costs. Upon the other hand, it is the office of statistics, by correlating the volume of service units expended with cost, time and money, to reveal ways whereby the value of the operation or of the service may be increased, or the expenses of rendering it may be reduced. Accounting is concerned primarily with aggregate expenditures of money; statistics with a service unit analysis of those expenditures. Each is indispensable to intelligent operation of a transport system and to the planning of a coordinated system of transportation.

64. Present Accounting. The accounts of railways and interstate pipe lines, and a relatively few water carriers are kept in accordance with the classifications prescribed by the Interstate Commerce Commission which, however, are designed primarily to reflect the operations of each type of carriers. The great majority of water and highway carriers do not keep accounts in accordance with a uniform classification. A system of uniform accounting is prerequisite to any study of the comparative utility of various forms of transport agencies.

65. Present Statistics. The Commission prescribes for railway carriers statistical reports generally reflecting the services accorded, with respect to traffic and operations. These statistics usually are kept and reported for



the system of the carrier as a unit, which makes it practically impossible to correlate accurately traffic statistics or operative service units with expenses from a function, location or service standpoint.

Individual railways, in varying degrees for their own managerial purposes, attempt to make such correlations, and special studies frequently are offered in litigated proceedings before the Commission or courts. In few if any cases are expenses and service units correlated currently. The Commission requires very few statistics to be kept or reported by carriers other than railroads and so far as it appears, few are kept by these carriers for their own purposes.

66. Modernization. Information which modern exigencies and good judgment demand shall be made available to carrier and governmental authorities, for management, regulation and planning may be described generally as follows:

(1) The financial results, revenues, expenses, income and perhaps profit and loss of each kind of carrier business, such as passenger traffic, (coach, reserved, or suburban) mail, express or merchandise traffic, freight traffic, generally or specifically with respect to such important traffics as perishables, coal, petroleum, etc.;

(2) The volume, service units, and costs of handling traffic generally and with respect to particular commodities, for basing rate scales upon such costs, and for classification rating upon the "value of the service" principle;

(3) The aggregate and unit cost of operating an individual facility or a group of such facilities, such as a station, a branch line, a specified freight or passenger train, over a given period of time, etc.;

(4) The cost of operating different types of facilities in different kinds of services, such as steam, Diesel, gasoline or electric power units, passenger, head end or Pullman cars, box, tank, flat or container cars, heavy or light duty trucks, tractors with semi or four-wheel trailers, etc.;

(5) The cost of any particular operation at any particular city or on a specified division, such as receipt or delivery of freight, classification, transfer, interchange or line movement of vehicles, etc.;

(6) The cost of performing a particular service, such as switching a specified plant, icing cars at a given terminal, cross-town switching, etc.;

(7) The comparative value (from a cost and service standpoint) of different types or sizes of trains in different classes of services or conditions, or the use of different kinds of material, different methods, or different kinds of personnel, etc.

In the coordinated transport system toward which we should aim, the prices, of necessity, if not of carrier volition, will tend to be made with respect to the cost of the most efficient instrumentality for each individual service. The relative utility of the several instrumentalities will always be in the foreground. It is necessary, therefore, that any system of statistical accounts be uniform in its application to all modes of transportation, since comparative analyses are essential not only to intelligent pricing, but also to the design of a planned transportation system, although the need for detail and refinement diminishes inversely with the size and extent of the operations, since the simpler the operation the less complexity there need be in accounting for it. For this reason the statistics and records required of small operators - rail, water or highway - may be made much simpler than would appear from the above description, which deals primarily with the large and complex operations.

## XVIII CARRIER INQUIRIES

67. Statistics Used. The statistics used with respect to the several surveys were compiled by the carriers who replied to the several inquiries, supplemented in some cases by those reported to agencies of the Federal government. As far as possible the statistics either of traffic or costs represent the actual results of the base year's operations in the aggregate. Due to the facts described in the preceding sections, even these aggregate statistics were not always available and in many cases separation between location or service had not been currently maintained. Wherever feasible, these separations were made upon the basis of actual records and in other cases upon formulas or sample tests.

68. Unit Costs. The cost analyses are of necessity special postfactum studies. Since many of the carrier functions, particularly those of rail carriers, are joint between two or more locations or services, analyses required distribution upon the basis of "use factors" employed in each.



69. Statistical Procedure. In the following analysis of operations, the fact must be kept in mind that operations and their costs can and generally must be viewed from the standpoint of three distinct classifications, each of which covers the entire field and completely overlaps the other two. Sections 72 to 103, immediately following, deal with a function analysis of the accounts -- capital servicing, total operating costs, cost of maintaining way and structures, cost of maintaining power, cost of maintaining vehicles, cost of conducting transportation, and general, traffic, and tax expense, in each of which only the cost of the particular function, without overhead, is stated.

In sections 104 to 107, following, however, location and service analyses are made, including in each case the total cost of the operating functions of maintenance, transportation, traffic, general, and tax, with respect to particular services or locations in yards, road, line, and terminal.

## XIX NATURE OF OPERATIONS

70. Extent. Surveys indicate that, omitting from consideration the highway operations, present rail, water, and pipe line transport facilities are ample to handle several times any probable traffic, and that judged by capacity alone, there will be no need for additional facilities in the near future. The need will arise, however, when the cost of supplying and maintaining new facilities is less than the economies made possible by the elimination of present inefficient and obsolete facilities, which in such cases should be abandoned. The cost of maintaining the surplus of transport facilities ultimately will fall upon the nation, and in determining the increase of those facilities, its interests rather than the interests of an individual carrier or an individual shipper or community should prevail. A toll upon the nation's commerce, which is created by the construction of additional facilities of whatever type, is justified only when the service thereby made available is not and cannot be furnished by present facilities, regardless of how advantageous it may be from a standpoint of the individual carrier or community.

## XX CIRCUITY OF MOVEMENT

71. Directness. Data indicate that the average rail carload moves approximately 11 percent further than would be necessary, if it were moved by a direct line route in common use. Some degree of circuity is inevitable so long as there are competitive routes, but the situation is not one which should be viewed with complaisance, since unquestionably the

11 percent additional service is reflected to a considerable degree in the rail cost. On the other hand the most direct route is not always the most economical; grades, congested lines, or terminals and other operating characteristics are to be considered.

Intercarrier traffic is the cause for a large amount of this waste of transportation, due to the number of routes usually kept for movements. This traffic would naturally seek the direct route if it were not for competitive carrier effort to deflect it-a condition which, from the standpoint of the individual railways involved, may seem in many cases actually vital to their interests. From the wider public standpoint, it would be cheaper to give a direct subsidy to protect those interests than it is to provide the subsidy indirectly plus the waste entailed.

Cooperative action of the carriers to form a limited number of routes for the movement of all intercarrier traffic would go far to reduce if not eliminate rail circuity to the extent that it is wasteful.

## XXI OVERALL COSTS

72. Investment. Using "book cost"(without depreciation) as the equivalent of investment and apportioning investment upon an expense basis,* we find that the capital in freight facilities is about 20 billion dollars, of which 18 billion are rail,# 3/4 billion pipe line, and 1/2 billion water carrier. In addition, there are approximately 2 billion dollars invested in motor trucks, an unknown part of which is devoted to intercity transportation of freight.

73. Servicing. The cost of capital servicing may be viewed from either the accrual or the cash basis. The former basis assumes that over a period of years, in order to attract necessary new capital, present capital must be adequately serviced, and that the obligation is cumulative, since in the long run deficiencies of any year must be made good in a later year. Upon this basis, the cost of capital servicing is calculated whether or not it is earned or paid.

* Maintenance expenditures, probably a better basis, would increase the freight proportion about 5 percent.

# Throughout this and following sections, only freight proportion is considered - passenger proportion, about 7 billion dollars, and a passenger operating cost deficit of 200 million dollars are not included.



If 5 percent be deemed ample to service the investment, which is exceedingly doubtful, about 1 billion dollars per year is required for this purpose, which amounts to 2/3 of the 1932 rail revenue; and about 1/4 of the average rail revenues of the 12-year period. It was earned by the railways in 5 out of the 12 years. Return of business conditions similar to those which then existed would enable the carriers to service this capital if some permanent reductions in operating expenses could be effected. If substantial economies can be made, freight transportation should permit a service of 6 or 7 percent upon the investment.

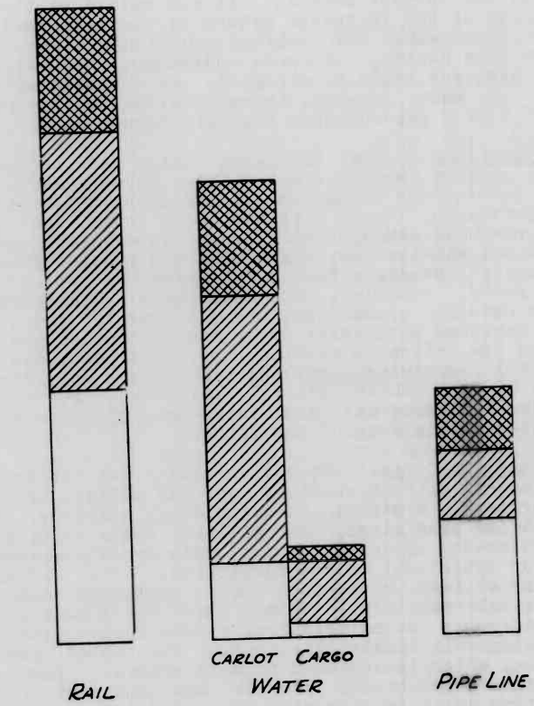
74. Functions. The functions which go to provide transport service may be grouped into three general divisions: (1) Maintenance of the facilities used in the service; (2) transportation, i.e., utilization of those facilities; and (3) overhead administration and supervision of the operations and maintenance. Each of these general functions presents several phases - thus maintenance has to do with roadway, power, vehicles, and stations. Transportation activities embrace assemblage, road movement, and station service. Overhead activities cover administration and taxes. In this and the following section, the total cost, excluding only capital servicing, will be treated and only from the standpoint of the three general divisions. The sections immediately following will deal separately with the activities embraced within each of the latter.

75. Function Costs. Operative cost per net ton mile (rail distance*) of rail carriers was 8.3 mills; of water carlot carriers, 6 mills; of water cargo carriers, 1 1/4 mills; and of pipe lines, 3.2 mills. These costs do not include interest or expenditures made by others than the carriers (or operators) of the facilities. The difference between the railway and common carrier waterway cost, 2.3 mills, rests entirely in maintenance cost, the transportation and overhead costs being practically identical. The pipe line has relatively little line cost. Its chief cost is depreciation, which is included in maintenance. The cargo water carriers undoubtedly provide the cheapest form of transportation as it is presently conducted.

## XXII CARRIER FIXED PLANT

76. Necessity. Both railways and pipe lines provide and maintain a private way over which to conduct their operations. Water and highway carriers use public ways and any cost of maintaining the way is provided in the first instance out of the public treasury. Any carrier expenditures in reimbursing the government for this cost are in the

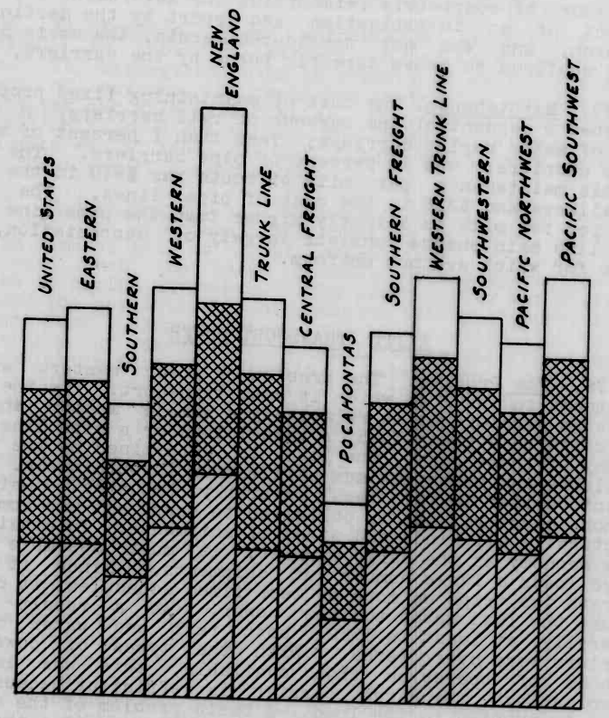
* In order to reduce costs to a common unit for comparison, the ton miles of water carriers have been converted into the number of ton miles which would have been necessary to provide the same service by rail.




COMPARATIVE CARRIER FUNCTION COSTS
PER NET TON MILE

LEGEND
MAINTENANCE
TRANSPORTATION
OVERHEAD






COMPARATIVE RAILWAY FUNCTION COST
PER EQUATED TON MILE

LEGEND
MAINTENANCE
TRANSPORTATION
OVERHEAD

form of tolls, licenses or taxes, which often are mixed with a general tax obligation. The extent to which these carriers are subsidized - that is, the extent to which such payments fall short of completely reimbursing the government - is the subject of an investigation and report by the Section of Research, and was not considered herein, the costs shown being confined to those directly borne by the carriers.

77. Maintenance. The cost of maintaining fixed property absorbed 9 percent of the revenue of rail carriers; 2 percent of water carlot carriers; less than 1 percent of water cargo carriers; and 14 percent of pipe carriers. The cost of this maintenance per mile of route was $940 in the case of railways and $316 in the case of pipe lines. The rail cost per ton mile is slightly higher than the pipe line cost. Pipe line maintenance consists largely of depreciation, the rates for which are not uniform.

## XXIII TRANSPORT POWER

78. The Problem. The problem of power centers around adaptness to the load which it must transport. In the case of cargo carriers it is relatively a simple matter whether the cargo be a train load, a vessel load or a pipe line run. In any of these cases, the load is determined by the power available and hence maximum utilization is obtainable. The carlot carrier is far less favorably situated. Being a common carrier, it is obligated to serve all who come and practically all kinds and sizes of shipments. To attain the same economy as the cargo carrier, it must assemble into cargo loads a large number of shipments. Since it must operate its trips on more or less fixed schedules, it cannot adjust the load moved to the power. As a result quite generally, at least in 1932, both rail and water carlot carriers were overpowered. With the types of power and methods of operation then available, this was largely unavoidable. The cargo carrier is efficient because its power is adapted to its load. A basic problem of the carlot carriers, particularly the railways, is to devise types of power and methods of operation which will make it possible to accomplish the same end.

79. Present Capacity. From the water carrier survey, it appears that the carlot carriers utilized about 44 percent of their capacity in 1932, while from the carload survey, it appears that the rails utilized about 25 percent of their power capacity. The extent to which the rail train is overpowered could not be calculated accurately from the data. Gauged entirely by the weight of the locomotives required to transport the load and for the United States as a whole, the largest tonnage train was the manifest train.

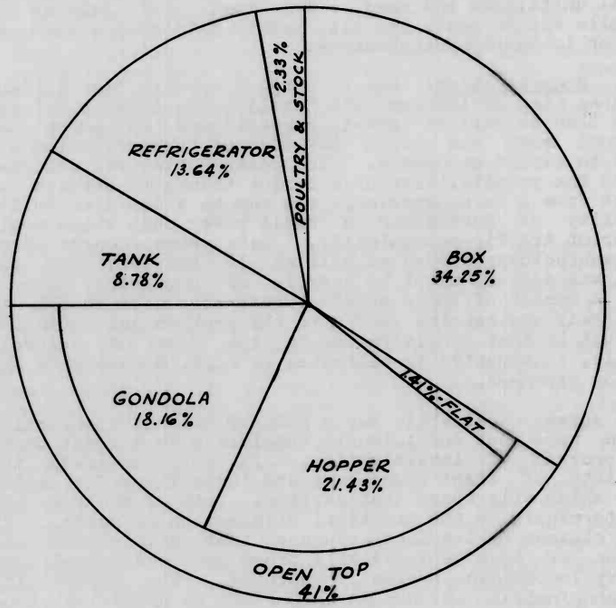


Using the average weight of the locomotive in this train and the net tons which were handled therein as bases, it appears that the way train power is utilized to two thirds and the branch line power to one half its capacity.

80. Maintenance. Power maintenance expense of rail relatively is about 80 percent higher than that of pipe lines. It aggregated over 10 percent of rail costs and 8 percent of revenue, 52 cents per train mile and not quite 2 cents per car mile (all trains). The foregoing costs deal with all units, road and yard. The road cost expense per train mile was 37 cents for all power maintenance and 35 cents for locomotive maintenance.

81. Modernization. As a cargo carrier the railway approaches in efficiency and utility the water carriers. Loss in time as well as great expenditures of money are occasioned when the cargo methods of transportation are applied to carlot movements. The power survey was designed to sound the possibilities of a carlot transport service as distinct from a cargo service, the key to which lies in the possibility of developing a small power unit which would move carlot traffic economically. Data were sought from every manufacturer abroad as well as in America, who the Section was advised might be capable of producing such a unit. A number of these manufacturers were good enough to devote their engineering staffs to the problem and submitted the result of that consideration in the form of concrete proposals, accompanied by estimates of cost, maintenance and operation expenses.

The survey necessarily was a pioneer one and the results obtained were not sufficiently conclusive to suggest other than a program of investigation. It does indicate the possibility of light power cars and locomotives for carlot service which will speed that service, both on the road and in the terminals by the practical elimination of yards. It is also claimed by the manufacturers that maintenance and operation of such vehicles will prove more economical than the heavy locomotives presently employed. The opportunity for technological advance in this field is promising provided, as in all other areas of research, the conventions and inhibitions of experience and common usage are disregarded.




DISTRIBUTION OF RAIL TRAFFIC AMONG TYPES OF EQUIPMENT
DECEMBER 13, 1933



## XXIV TRANSPORT VEHICLES

82. Present Vehicles. Cost of handling the tare weight of the loaded freight car and of the empty car was greater than the cost of handling the net load. The inutility of the present unit results in part from the following characteristics: Excess weight of the vehicle itself; narrow limitations with respect to its ability to handle various kinds of commodities; lack of conformity of its volume and weight-carrying capacity to commercial sales units; insecurity of the lading; and sluggish movement.

83. Containers. Within recent years there have been developed a number of units designed for coordinated freight transportation. The most successful of these units appears to be a container which is quickly and cheaply transferable from rail to highway and waterway vehicles. The relative advantages of this type of vehicle as compared with the present freight car will be discussed in detail in the following sections.

84. Weight. Of vital importance to every carrier is the amount of dead or tare weight which must be moved in order to transport the payload. It costs just as much to haul a ton of dead weight as to haul a ton of payload, and for each ton of tare eliminated a ton of payload can be carried at no increase in the transportation cost. The expense of the non-paying load is so large a part of the total transportation cost, that drastic action in weight reduction of rail vehicles is imperative. This can be accomplished in three ways - by decreasing the tare weight of vehicles through the use of superior materials and improved design, by increasing the average load carried on all cars, and by reducing the empty haul.

85. Versatility. The ideal transportation vehicle would be one which would efficiently carry any kind of freight under all conditions. With such a vehicle the excess ton miles which now accumulate, due to carriers hauling empty equipment long distances because it is not suitable for the particular commodities offered for shipment, would be eliminated.

Properly designed containers would increase the efficiency of freight carrying bodies. Omitting for the time being the question of size or capacity, it is possible to build a rugged container of light weight which will carry with equal facility all dry materials - either bulk or packaged. The same container can be properly insulated at a moderate increase in original cost, provision being made for installation of heating or refrigerating equipment, when and as required. An analysis of all commodity carloadings for

the year 1933 indicated that two sizes of containers would efficiently move all commodities, loading respectively 2 and 5 to the flat car.

86. Adaptness. The evidence indicates that modern business requires quantity movements of commodities in smaller lots than now are required by the carload minimum weight provisions. The tendency toward quick turnover, reduced inventories, and small but more frequent shipments throughout industry has been of increasing importance for more than a decade. But curiously enough, for operative economy, the size of the freight car has continued to increase. A solution to the problem lies in the use of containers, which preserve the economy of the present large car chassis and also meet the shipper's requirements.

87. Dependability. Equipment manufacturers have been active during the past several years in developing equipment which contributes to the dependability of the freight car. Modern draft gears, air brakes, non-harmonic springs, cast steel parts, non-friction bearings, and improved design of the many parts which make up a freight car all help to produce a car in which commodities are carried with security.

A further aid to the security of lading is obtained when containers are substituted for present car bodies.

88. Accessibility. A characteristic of transportation vehicles which directly affects every shipper is the cost and time involved in packing, crating, stowing, unloading, and transferring freight shipped in quantity lots. In many cases, the aggregate cost of these elements exceeds the transportation charges. It is possible for the transportation agencies to reduce the expense which shippers now incur, as well as to speed up transportation service, by providing vehicles in which goods can be readily loaded and unloaded.

By the use of skid platforms and by loading containers directly at the end of an assembly line, or at point of production, much handling would be eliminated.

The cost of initial loading and final unloading can be materially reduced by providing a container which permits mechanical handling of materials. Given such containers to load or unload, shippers can effectively use various sorts of material-handling equipment to perform the work quickly and at low costs.

Any body designed to carry freight can be made accessible by the inclusion of properly designed doors, but unless the body is demountable, in many cases it cannot be delivered at



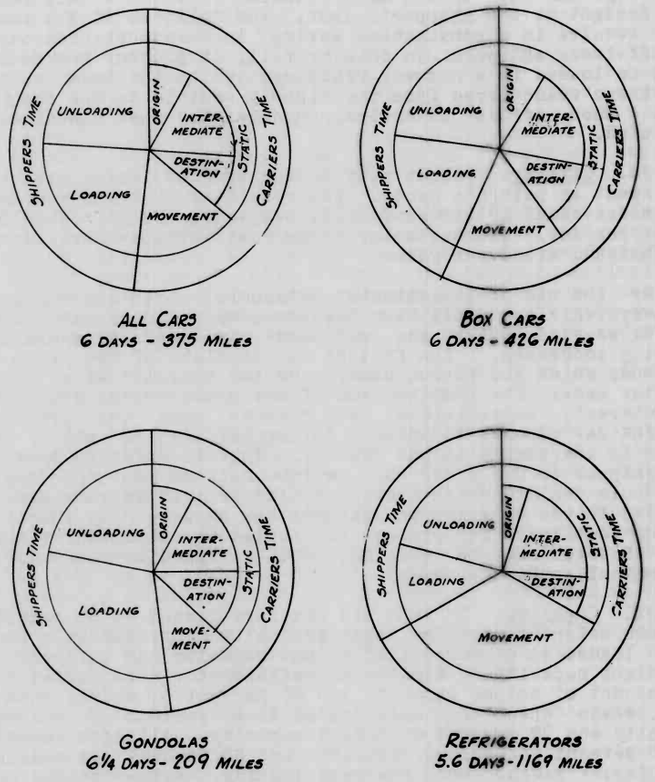
the point where it will be most efficiently loaded or unloaded. The container thus has a unique advantage over a body permanently attached to a vehicle.

89. Mobility. The quality of accessibility in the design of a freight-carrying body is linked with that of mobility. The fact that a motor vehicle receives a full load of freight at the shipper's door, and delivers it the same way results in a substantial saving in transportation cost to off-track shippers. To ship by rail, at present the goods must be loaded in a highway vehicle, moved to the team track, and there transferred from the highway vehicle to the freight car. Such effort is entirely unnecessary when containers are used.

90. Utility. About half of the time of loaded cars is now spent in patron's hands. The result is that the average car moves about 10 thousand miles per year, or less than 30 miles per day, whereas motor freight vehicles average over 25 thousand miles per year.

By the use of demountable containers, both railway and highway vehicles could have heavier average loads and the useful service which the railroad car performs would be greatly increased. The freight car consists of two parts - the body which the patron uses, and the chassis which the carrier uses. The same is true of the motor truck. The cost of interest, depreciation, and repairs upon the average freight car amounts to about 1 dollar per day of which 65 cents is chargeable to the chassis. Thus in order to permit the shipper to use a car body which costs 35 cents per day, the whole vehicle which costs 1 dollar per day is surrendered for two thirds of which the shipper has no use. By substituting containers for present car bodies the utility of the car chassis can be doubled, and a speedier and more economical service produced.

91. Capacity. In 1932 all box cars loaded to 50 percent of both weight and volume capacity, although automobile box cars loaded to 82 percent of volume capacity and 11 percent of weight capacity. Similarly, refrigerator cars loaded to 51 percent of volume capacity and 35 percent of weight capacity, while open top cars loaded to 88 percent of volume capacity and 79 percent of weight capacity. All cars loaded to 57 percent of volume capacity and 63 percent of weight capacity. Taking only the best loading, either weight or




SERVICE ANALYSIS OF RAIL EQUIPMENT
DECEMBER 13, 1933



volume, it was found that all box cars averaged 71 percent of capacity, refrigerator 54 percent, stock 98 percent, open top 97 percent. Present average tenders of commodities can be loaded into containers of the two sizes previously described at a utilization approaching 100 percent.

The data indicate that under present operating methods, which require about half of the total serviceable time for loading and unloading and about 40 percent of the carrier serviceable time, allowing further for six weeks of shopping per year, the 1932 car supply had a capacity of over three times the traffic of that year, and about 50 percent more traffic than was handled in the peak year, 1929.

92. Modernization. The average yearly cost of repairs for all cars from 1920 to 1932, inclusive, aggregated 358 million dollars with an average annual cost per car of $156. Once in each 10 years the cost of repairs equals the original purchase price. The average age of all freight cars on July 1, 1933, was 15.6 years.

Despite the large annual expenditure for freight car maintenance, records are not available which show the distribution of expense according to type or age of cars or kinds of parts. In the absence of such information it is difficult to determine what changes in car design would be justified in reducing repair and replacement expense.

The capital cost of modernization need not prove as great a deterrent as might appear from a superficial examination. The present railway car ownership amounts to about 2 1/4 million cars of which approximately one half are box cars. At an average service life of 20 years each, to maintain this supply would require replacement at the rate of about 100 thousand box cars per annum. In the economic depression the obligation to replace has been deferred so that there is an "accrued liability", the replacement of which soon must be met, aside from all considerations of obsolescence. Each of the new house cars herein suggested, if equipped with multiple body (container) sets, will be the equivalent of two of the present type cars, reducing all elements of maintenance referable to time by one half, leaving out of consideration economies due to lighter weight and greater versatility.

Furthermore, there are many thousand flat and low-side mill gondola cars, the latter having little present utility and the former being utilized in 1932 to but one third the extent of the ownership. These cars for a reasonable expenditure can be converted into container cars with a capacity equivalent to about 140 thousand present type box cars.

## XXV CONDUCTING TRANSPORTATION

93. Nature. Transportation in this and the following six sections is used to describe the operation of carrier facilities to provide service. Although there are wide differences in character of facilities employed, these operations may be grouped into three distinct classes: (1) Agency, the operation of station clerical and platform forces in connection with receipt and delivery of freight; (2) assemblage, for gathering, distributing or marshalling of the freight for movement; and (3) movement, the actual conveyance of the freight vehicles between cities.

The cost of performing the foregoing operations by rail and water carlot carriers was each 3 1/2 mills - much higher than the cost of the cargo (water and pipe line) carriers which was 1 mill per net ton mile in each case.

94. Agency. Agency operations consist in the paper work incident to receipt and delivery of all freight and in the physical loading, unloading, receipt and delivery of l.c.l freight. The total amount expended by rail carriers for this service in 1932 was over 150 million dollars and constituted 6 percent of rail revenues and 8 percent of rail costs. The unit costs of carlot carriers, rail and water, were about the same.

The report of an intensive survey of rail freight station operations, conducted by Mr. F. J. Ginn, is reproduced in the Factual Summary. Conclusions reached by Mr. Ginn are concisely stated by him in his report. These conclusions, so far as pertinent at this place, are:

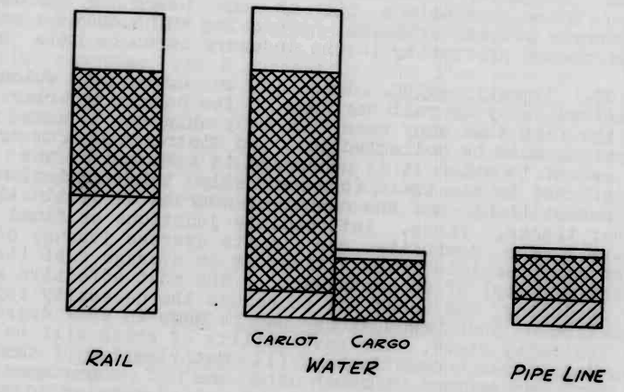
(1) That speed, accuracy and efficiency would be promoted by utilization of a copy of the bill of lading as a waybill and the elimination of duplication of waybills in assessing rates, in computing freight revenue and other accounting work, and by transferring this work to central bureaus or key stations;

(2) That existing freight stations of all carriers be consolidated and where practical relocated at main receiving or forwarding freight yards;

(3) That highway trailers are the most economical for collecting and delivering l.c.l. freight and for transfer between stations;

(4) That freight commodity classifications be consolidated, rate structures simplified, and the number of tariffs on file at small and joint stations be reduced;






CARRIER TRANSPORTATION COSTS PER NET TON MILE

LEGEND
ASSEMBLAGE
MOVEMENT
AGENCY

(5) That daily, monthly and yearly reports of station costs and productions be kept upon a uniform basis and interchanged between interested carriers.

95. Assemblage. The cost of assemblage for pipe lines was 11 cents per ton, for carlot water carriers 27 cents per ton, for cargo water carriers 1 1/2 cents per ton, and for railways 48 cents per ton or $11.48 per car originated, or about $6.25 per terminal (initial or final) handling. This yard switching cost (transportation expense only) was almost as great as the entire transportation expense involved in moving trains between terminals. Rail assemblage operations consist of classification, the expense of which was $4.71 per car (originated); transfer expense $3.14 per car; interchange track switching 55 cents per car; and industrial track (including house and team tracks) switching $3.07 per car. These operations lie at the heart of one of the industry's gravest problems - a problem which must be solved if permanent prosperity in the industry is to be had.

96. Classification. This is an operation which is practiced only by rail carriers. Its necessity arises out of the fact that many cars from many shippers to many destinations must be collected into and distributed from trains. The extent to which it is necessary is affected by the number of cars in the train (theoretically this variation is in permutation) and the number of sources or destinations, either tracks, yards, intermediate junctions or final terminals. The composite car in its average journey of 362 miles was classified over 7 times at an average cost (transportation only) of 62 cents each. The most effective means for reducing the cost is to reduce the necessity for the operation. Such reductions can be made in some degree by the following steps, the advisability of which will be discussed in later connections: (1) Motorization of terminal delivery operations through the use of containers; (2) reduction in the number of routes for intercarrier movements and the number of points where interchanges are made; (3) reduction in the length of carlot trains.

97. Transfers. Transfer operations which are also almost entirely confined to rail carriers consist of movement of cars from yard to yard within the same terminal and are made necessary by the multiplicity of yards. They are of two classes, single carrier where the movement is between yards of the same carrier, and multiple carrier (interchange) where the movement is between the yards of two carriers. Transportation cost alone of these operations was over 100 million dollars or 5 percent of total rail costs - nearly one third as great as road transportation cost. The composite car was transferred from one yard to another four times at an average cost of 68 cents each. Reduction in transfer costs can be effected in whole or in part by (1) unification of terminals, (2) reduction in routes, and (3) short trains.



98. Industrial. The transportation cost of switching cars to and from initial or final tracks (house, team or industry) amounted in the case of railways to about 4 1/4 percent of the total rail cost, about 13 cents per ton or $3 per car. Lighterage, which in many cases is a parallel expense of water carlot carriers, amounted to slightly over 1 percent. Along the Atlantic Coast where it is generally more prevalent, it amounted to about 15 cents per ton. A substantial part of water traffic collection and delivery service is performed by rail lines.

99. Road Movement. The movement of freight between terminals required in transportation expense only 13 percent of rail revenue (17 1/2 percent of rail cost); 45 percent of water carlot carrier revenue; 78 percent of water cargo carrier revenue; and 8 percent of pipe line revenue. This movement cost is lowest in the case of pipe lines, 1/2 mill per net ton mile, and highest in the case of water carlot carriers, 2 1/2 mills. Water cargo carrier cost is 1 mill and rail cost 1 1/2 mills. The relatively low rail cost is due to the practice of aggregating and moving carlots in trains approaching cargo dimensions, an economy obtained in large part at the price of increased assemblage operations and costs.

## XXVI TRANSPORT OVERHEAD

100. Overhead Costs. Overhead operations consist in: The performance of staff or central office functions of general direction, accounting, law, purchasing, and what accounting classifications often describe as sales promotion or traffic expense of pricing and selling, all of which are dealt with under the head of administration expense; the discharge of the tax obligation; and liability arising from loss and damage to freight.

In the case of rail carriers, overhead costs aggregate 15 percent of the revenue (19 percent of the costs); water carlot carriers 27 percent of revenue; water cargo carriers 18 percent; and pipe line carriers 12 percent. The cost per net ton originated is highest in the case of water carlot carriers - $1.45, and lowest in the case of water cargo carriers - 10 cents. With pipe line carriers it is 31 cents per ton and with rail carriers, 57 cents per ton. Per ton mile, however, due to the longer haul of the water lines,

the rail cost is highest, 1.6 mills; water carlot carriers 1.5 mills; water cargo carriers .2 mill; and pipe line carriers .8 mill.

101. Taxes. The taxes laid upon railways are relatively much heavier than upon any other form of transport, constituting about 8 percent of their total revenue and 10 percent of their cost. With the pipe line carriers the ratio to revenue is about the same. With water carriers of all types it averages less than 1 percent. With highway carriers it varies from 2 to 4 percent, depending upon the length of haul. The costs per ton handled are rail carriers 30 cents, water carriers 5 cents, pipe carriers 19 cents, and highway carriers about 8 cents.

102. Administration. Rail costs of both phases of administration - general or executive expense, and sales expense - are much lower than for either type of water carrier, and with respect to administration expense are also lower than pipe line costs. The traffic ratios to revenue, respectively, were: Rail 2 percent; water carlot 11 percent; and water cargo 3 percent. Due doubtless to the fact that the great bulk of pipe line traffic is from affiliates, those carriers reported no sales expense. Upon a net ton basis the costs were: Rail 10 cents; water carlot carriers 62 cents; water cargo carriers not quite 2 cents.

Revenue ratios of general or executive expense were: Rail 4 1/2 percent; water carriers about 14 percent; and pipe line carriers 4 1/2 percent. This expense per net ton was: Rail 18 cents; water carlot carriers 78 cents; water cargo carriers 9 cents; and pipe line carriers 11 1/2 cents.

Rail administrative expenses, particularly those for sales promotion, are relatively so much lower than those of other carriers that the question arises whether they are not in fact inadequate in view of the present traffic situation.

103. Liability. Rail expenditures for loss and damage to freight aggregated slightly less than 15 million dollars in 1932.* This is equal to 6/10 of 1 percent of the rail revenues and not quite 3/4 of 1 percent of rail costs. Comparable expenses of other carriers could not be segregated.

* These expenditures are included in income statements, section 4, but not on any of the cost analyses.



## XXVII YARD AND TERMINAL OPERATIONS

104. Elements. The foregoing analyses of operations are from the function standpoint. To measure relative utility, however, as well as to develop unit costs for pricing purposes, it is necessary to consider the aggregate costs of all functions necessary to accomplish definite service objectives. Because of the individual characteristics which appertain to the several carriers, particularly the railways, it is convenient to make this distribution of operations in two steps, first a location one - between yard and road operations; and second a service one - between line and terminal operations.

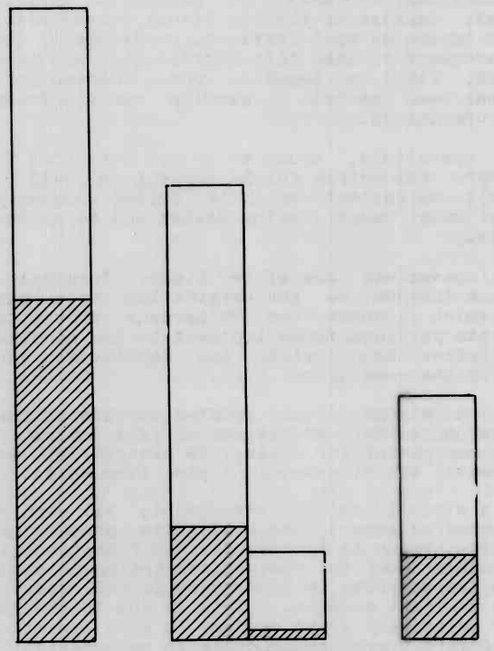
Yard operations, those which are conducted in terminal areas, were responsible for 54 percent of rail costs (all functions); 26 percent of water carlot carrier costs; 12 percent of water cargo carrier costs; and 29 percent of pipe line costs.

Yard operations are of two kinds: Terminal yardings, i.e., those incident to the origination and termination of the car which account for 70 percent of the total; and intermediate yardings, those incident to the handling of cars in yards other than origin and destination yards which account for the remainder.

Road operations, those located outside of the terminal areas, accounted for 46 percent of rail costs; 74 percent of water carlot carrier costs; 88 percent of water cargo carrier costs; and 71 percent of pipe line costs.

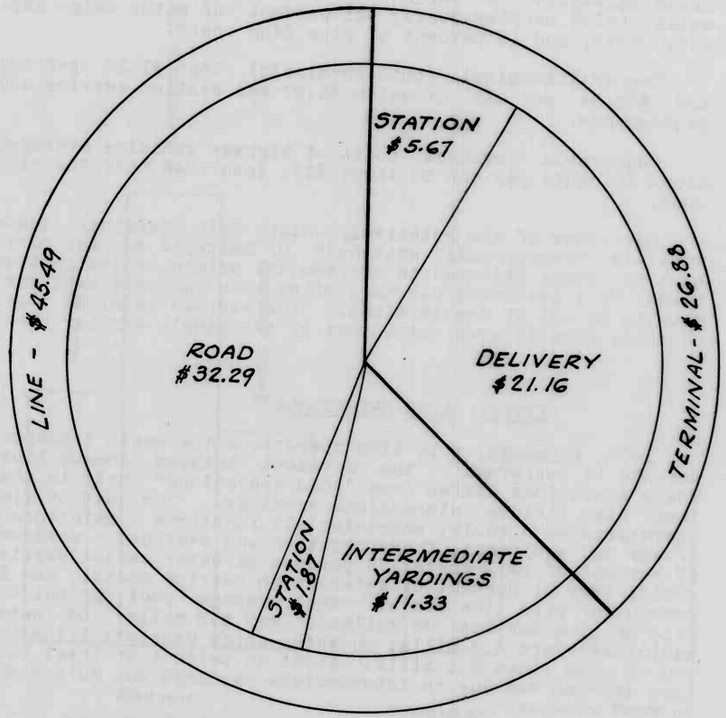
From a strictly service standpoint, all yard operations may be termed as subordinate activities preparatory to the main purpose, which is to move freight from consignor's door to consignee's door. The cost of performing this subordinate operation has so grown in importance in rail operations that it is the dominant expense. This is due to the practice of attaining relatively great economy in road operation at the expense of yard operation in order to assemble carlot traffic into cargo or tonnage train loads.

105. Utilization. The extent to which yards dominate rail service is in part reflected by their capacity. Exclusive of industry tracks, the rail yards of the country have capacity to chamber at one time over 3 1/4 times the entire number of carrier and non-carrier cars, and to house in roundhouses at one time nearly all the freight locomotives owned. In 1932 the total switch engine hours employed were 50 percent greater than the locomotive hours of road trains. The miles of track in yards were greater than those of branch lines and were half as great as the total route miles of main lines. On the average one car was received or delivered on




CARRIER LOCATION UNIT COST PER NET TON MILE






RAIL SERVICE UNIT COST PER LOADED CAR

an industry track every second business day. It is quite evident that yard facilities today are substantially in excess of any likely need therefor.

106. Terminal Costs. Rail terminal (terminal yardings) costs aggregated 37 percent of rail costs; 26 percent of water carlot carrier costs; 11 percent of water cargo carrier costs; and 16 percent of pipe line costs.

The rail terminal (both terminals) cost $1.13 per ton and $26.84 per car of which $5.67 was station service and maintenance.

Comparable terminal costs of highway vehicles averaged about 50 cents per ton or about $12, less than half the rail cost.

One cause of the relatively high rail terminal costs lies in "reciprocally switched" or multiple carrier cars, that is, those switched to or from the origin or destination track by a switching carrier other than the road haul carrier in or out of the terminal. The average terminal cost of these cars is over twice that of the single carrier cars.

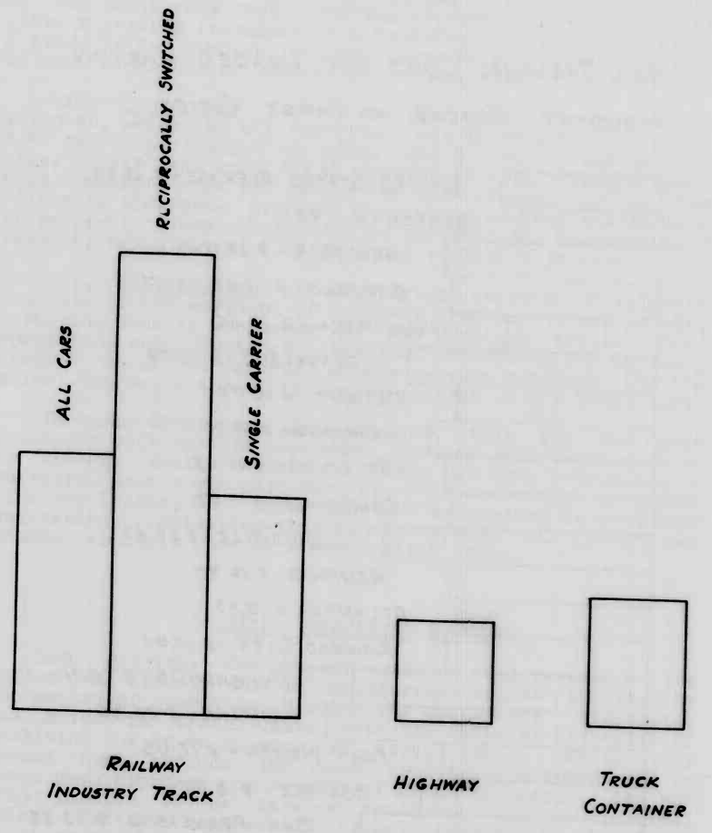
## XXVIII LINE OPERATIONS

107. Elements. In line operations the basic transport service is performed - the movement between communities. These operations differ from "road operations" only in that they also include intermediate yardings. The cost of line operations as a whole, embracing all functions - maintenance of way and equipment, transportation and overhead - absorbed 63 percent of rail costs; 76 percent of water carlot carrier costs; over 91 percent of water cargo carrier costs; and 32 percent of pipe line costs. The average cost per net ton mile of line service on railways was 5.3 mills; on water carlot carriers 4.6 mills; on water cargo carriers 1.1 mills; and on pipe lines 2.1 mills. About 40 percent of total rail line expense was due to intermediate yardings and 60 percent to road expense

108. Utilization. In 1932 rail freight trains on the average moved in the same direction on a headway of about 11 hours or 176 miles. The trains were grouped into four classes for analysis - manifest, drag, main line way, and branch.* The composite manifest train consisted of 40 loaded cars, slightly over 750 net tons, and approximately 32 empty cars. Drag trains averaged 26 loaded cars, 794 net tons and approximately 27 empty cars.

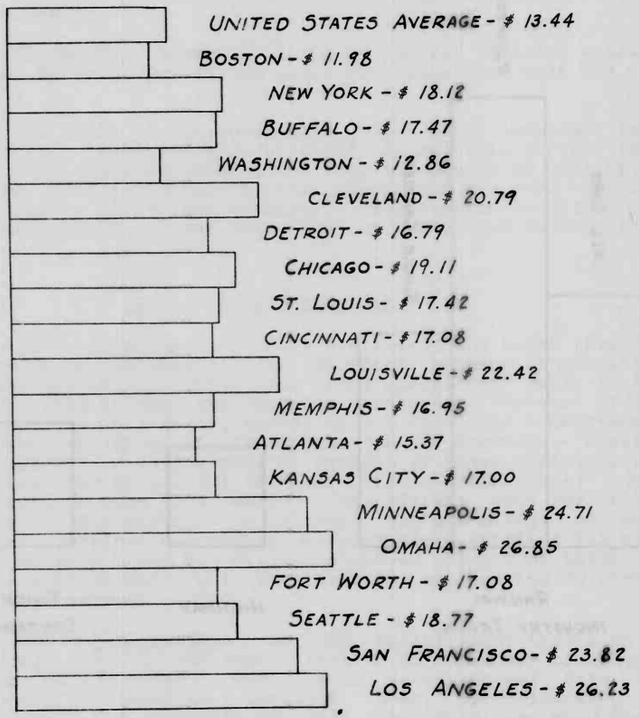
* Definitions in Glossary.






RAILWAY AND HIGHWAY TERMINAL COSTS PER LOADED CAR

RAIL TERMINAL COST PER LOADED CAR ON INDUSTRY TRACKS AT LARGE CITIES






109. Yardings. Intermediate yardings (single and multiple carrier) of cars en route in 1932 cost the rail carriers over 300 million dollars, and were about 16 percent of the total rail cost. On the average a freight car was given a yarding (terminal or intermediate) every 70 miles or 6 times in its average journey, there being over 100 million of such handlings in 1932, at an average cost of over $3 each.

110. Conveyance. The average cost of road train movement, embracing all functions, was $2.24 per train mile, 8.49 cents per loaded car mile, and 3.7 mills per net ton mile. This was equal to 45 percent of total freight cost. This composite cost per loaded car mile is made up of the following elements: Overhead 20 percent; roadway maintenance 21 percent; power maintenance 16 percent; car maintenance 3 percent, train movement 38 percent; station 2 percent.

111. Distribution. Distribution service of railways consists of the movement of carloads from and to way points, a service usually performed by way freight trains. This operation, which partakes largely of collection and delivery, handled about 14 percent of the revenue movement (in ton miles) but was responsible for 28 percent of the total cost.

In terms of revenue units handled, this was the most expensive rail service performed, costing over twice as much as through train service. Of the net tons originated by carriers, nearly one half were reported as handled in branch line way trains, and three fourths as handled in main line way trains, indicating that on the average all freight was handled at least once by a way freight train.

## XXIX INTEGRATED MOVEMENT

112. Problem. The present costs of rail transport are influenced largely and in considerable degree inflated by the method of operation in which car units are aggregated and moved in train units with the definite objective of realizing the known economy of cargo loads. While this method does produce low cost road train movement and in cases does approach the economy of cargo movements, it not only imposes severe service handicaps due to terminal delays but also creates additional expense in terminals which go far toward offsetting the line economies.

The doctrine that a tonnage train is ipso facto an economical train has become so deeply imbedded in railroad philosophy that it is difficult to orient one's view sufficiently to reexamine, and perhaps modify, some of its implications.

The basic job which the railway undertakes is to move freight from one point to another. In its simplest aspects this would imply a single or unit movement, in which case the sales unit and the transportation unit would coincide. By means of a constantly increasing tractive potentiality in its power, it has been able to perform the line movement more cheaply by assembling an increasingly large number of such sales units into a single train or transportation unit. This practice, however, ceases to be economical at the point when the amount saved in line cost is less than the additional yard cost incurred in assembling cars in the train. The criterion is not the line cost of the operation, but the aggregate cost of line and terminal operations.

113. Instrument Utility. Present practices of rail and highway operators in handling freight(excluding merchandise) may be summarized as follows: The highway operator transports the truck load vehicle directly from door to door by a movement in which the terminal and line movements are completely integrated. The railway accomplishes the same result in two wholly distinct and separate operations - one embracing the collection and delivery of the car, its assemblage at origin, reassemblage at intermediate terminals, and disassemblage at destination into and out of long trains - and the other, the movement of these trains from origin to destination.

The rail unit cost of performing this service was more than twice the comparable cost of highway motor vehicle operations, if the intermediate yardings are included; and 60 percent greater, if they are excluded. The rail terminal cost (collection and delivery) could be reduced in many cases by the substitution of truck container operation for switching, particularly in the case of multiple carrier cars.

If these two instrumentalities continue to be operated competitively, the truck advantage in the terminal is overcome by rail superiority on the line at about 20 miles, which is indicated to be the economical trucking limit, omitting considerations of rates, service, convenience, etc. If, however, the two instrumentalities be coordinated, the trucking distance will be shortened but its volume increased, while the net reduction in costs, in the aggregate, would amount to nearly 13 percent of rail revenues.



Moreover, there is a relatively large field in which the potentialities of the rails as a cargo carrier may be realized, if the carlot traffic be separated from the cargo traffic and the latter handled in full train load lots (and at train load rates) without yarding at origin, destination or intermediate terminals, i.e., as a single shipment from consignor's track to consignee's track.

The data indicate that a full tonnage cargo train moving from a single origin track to a single destination track, without breaking the train line, would do so at a line cost of less than 2 mills per net ton mile, or below the average cost of pipe line transportation. This train also would eliminate much of the present terminal operations and expense. While the cost of this character of rail operation would continue to be higher than the cost of cargo water carriers, it would be lower than any form of land transportation. With respect to the traffic to which this type of transportation is adapted, the limitations of which are real, such cargo rail service offers great potential good for the commerce of our country, domestic and foreign, as well as for the carriers which provide it.

Again there appear to be possibilities, not only of improved service but economy of operation, by adapting the carlot transportation unit more closely to the sales unit, particularly in distribution service.

The data gathered in the survey of light rail power indicate that the manufacturers now offer a type of light train of several cars, claimed to be capable of providing transportation of carlot freight at express train speeds, which practically eliminates terminal delays and which could be operated at a cost, including wages, no greater than the cost of operating conventional trains.

The foregoing is written with full appreciation of the impossibility of substituting such trains for conventional trains upon a wholesale basis. Since, however, the way freight trains, main and branch, are clearly the most costly of the trains operated by railways, experiments to test the claims of the manufacturers, at least on a few branch lines might well be considered. If such tests should demonstrate that the short rather than the long train is the most economical unit for carlot work, it would prove of immense public benefit because, from a service standpoint, it would prove far superior to present trains.

## XXX INTERCARRIER OPERATIONS

114. Necessity. Intercarrier operations have become necessary because commerce, having lost its provincial aspects, now extends far beyond the lines of a single carrier. These operations have assumed a dominant place in American transportation, particularly in the case of water and rail carlot carriers. The method based on assemblage of carlots into trains requires that these trains be primarily operated as a local movement of the individual carriers. Only in relatively few cases are they operated directly or indirectly as through movements.

115. Routing. The privilege of specifying the carrier's intermediate, as well as initial and final junction points at which the interchange shall be made, is conferred on the shipper by an act of Congress. Under present conditions its benefits are twofold: (1) It protects the small or intermediate carrier in the strife for traffic against its larger and more strongly intrenched competitors; and (2) it places a weapon in the hands of the shipper by which he can enforce good service.

The policy of wide open carrier routes, however, has developed evils which outweigh these conceded benefits: (1) The weapon in the shipper's hands can be, and increasingly in the past few years has been, used as a club by which to compel carriers to grant rate reductions or adjustments, instead of submitting such demands to the Commission; (2) the practice leads to prolixity and complexity in tariffs to avoid indefiniteness; (3) the policy encourages circuitous routing; (4) the policy has greatly increased the necessity, intensity and expense of off line solicitation; (5) the policy leads to wasteful methods of operation by increasing the number of points at which interchanges are made, by greatly increasing the number of interchanges themselves, and by discouraging through intercarrier train operations.

116. Cost. In 1932 there were over 50 million interchanges reported at an aggregate cost of 330 million dollars. The cost per car interchange was $10.78 and per intercarrier car originated $30.85.

117. Minimization. At all places where joint or unified yards are possible the cost of line interchanges can be reduced to that of an intermediate carrier yarding, which is about one third the present average cost of an interchange. With respect to terminal interchanges, the road-haul carrier can perform the service more economically by truck, particularly if containers are employed. The benefits of wide open routing to the shipper also are illusory. The service by direct competitive routes generally will be far superior to



that available by circuitous routes. Competition in service would be no less effective if, for a given movement, there were only three or four direct routes open instead of many thousand routes. With direct routes available, grouped into definite channels, the shipper's interests will be advanced by great acceleration in overall speed which results from the movement in through intercarrier trains, and also by the elimination of waste in operating expenses which in the end are borne by the shipper.

# COORDINATION

## XXXI OBJECTIVES

118. Commerce. Commerce is the one trait of man's civilization without which nations quickly disintegrate and their citizenship reverts to barbarism. A transport system is a first requisite of commerce. For this reason, it is generally recognized that the primary purpose of transportation is public service, though to be successful as a private enterprise it must be profitable.

The exploitation of commerce facilities is a public and not a private franchise, however desirable it may be that this franchise be privately exercised. There can be no private or vested right to such a public franchise, or to the advantage of location or the traffic accruing therefrom. Under no other conditions can private operation permanently continue.

119. Service. To develop trade, transport must point its service to meet every demand of traders, must adjust its prices to encourage the largest possible movement of goods profitably, and must encourage the establishment and development of markets. To this end the public has the right to expect that the operators of its transport will lead and not follow progress, and will be alert to adopt every possible improvement in facilities and services which man's genius may make possible.

The carrier's obligation goes further than operating its transportation facility. It must be prepared to employ that facility, in conjunction with other transport facilities, even in cases to the subordination of its own private gain to the public good.

This, however, by no means implies socialization. Quite the contrary is true. No private enterprise can function efficiently or serviceably except at a profit. Neither the owners nor the employees will contribute capital and labor essential to its continuance unless both are adequately compensated, and their respective positions made reasonably stable and secure. No greater disservice can be done the nation than to perpetuate a system of impoverished and pauperized transportation.





120. Economy. The carrier owes the obligation to employ every possible means to make its operations economical as well as efficient and serviceable. This duty extends not merely to the employment of modern and efficient instruments in its own operations, but also to its utilization of the facilities of others, or to the utilization by others of its facilities whenever the efficiency of the industry and thereby the national commerce are promoted.

## XXXII COMPETITION

121. Nature. Unlike some other public services, such as for illustration the telephone, there is no inherent necessity that transport monopoly be created. On the other hand, the fact that it is a public service places definite limits upon the extent to which competition should be permitted from the public standpoint.

The line of demarcation which, from the public standpoint, separates evil and good competition needs to be reconsidered and defined.

122. Evil. Competition is evil whenever, from the standpoint of the industry as a whole, it results in transportation waste, undue preference or instability. Measured by this criterion, the common varieties of vicious competition are: Competition between two different forms of transportation; market competition; price competition; and plant competition.

The purpose of transportation being to promote national commerce, the form of agency by which it is performed is of importance only to the extent that that agency be the agency, or combination of agencies, which will perform the task with the greatest celerity and economy. Competition between different types leads inevitably to the attempt by each agency to perform service for which its instrumentalities are inferior to those of a competiting agency, thereby impairing service and burdening commerce. This evil is inherent in this type of competition. Only by integrating transportation in carrier agencies, which utilize the facilities of all types of transportation, can a reasonably efficient and serviceable system be evolved.

Competition between markets, both of production and consumption, is intense and incessant. It leads carriers to overlook the fact that their duty is to the nation and not to the community, and is subversive of our domestic

policy of free channels of commerce with the opportunity to use them open to all, upon equal terms. When, however, a carrier's operations are restricted to a region or to a particular market or group of markets to which as a private enterprise it must look for its sustenance, it is quite natural for it to seek to promote the business of that market or markets at the expense of those which it does not serve.

In ordinary business affairs competition in price is the chief protection which the public has against extortion. This condition, however, does not apply to transportation. From early times the public has asserted the right to protect itself against unreasonable charges. At the present time, at least insofar as the chief form of domestic transport is concerned, the control over charges is plenary. Not only is there no need for price competition, but it leads to serious public evils. An obligation of the carrier, as important as that to charge reasonable rates, is that to charge non-preferential ones. In practically all, if not all, cases of competitive price making, the purpose is to get a definite business, sometimes of a single shipper or a small group, and in many such cases the result, if not the intent of the practice, is to prefer such a shipper or group of shippers. A second evil of competitive price making lies in the fact that since eventually price parity will be reestablished, but upon a lower level, carrier revenues are wastefully depleted.

Competitive duplication of plant and service is an evil in both its positive and negative consequences. The positive evil is the burden which the excessive plant or service casts upon transportation. The negative evil is the tendency by agreement to forego improvements in plant or service, because of the expense which others would incur to duplicate such improvements.

123. Good. Competition, however, when kept within reasonable bounds, is inherently beneficial. Nothing else will keep an organization on its toes so effectively. The fact that the service must be sold, not merely delivered, tends constantly to make competitive carriers seek better or more efficient means or instrumentalities for performing service, or to install new services to create or develop traffic rather than to filch it from one another. So long as private profit remains the incentive for carrier service, competition in service, restrained within reasonable limitations, must also remain if the service is to be kept efficient and economical.



## XXXIII MANAGEMENT

124. Necessity. Beginning as local carriers serving limited and localized areas, railways increased in number until there were a thousand or more independent lines. With the growth and development of the country, joint traffic over these lines gradually increased in importance. Coincidently, as the effect of this development, integration of carriers proceeded rapidly until arrested by the policy of enforced competition which, until recent years, actuated public regulation of transportation. With the coalescence of commerce continuing unabated until sectionalism in trade is fast disappearing, joint carrier traffic has assumed an overwhelming predominance in transportation. The present threatened breakdown during a period of subnormal traffic is traceable to the same fundamental causes of a similar breakdown in 1917 during a period of abnormal traffic. This cause is incoherence in the discharge of joint or common functions.

125. Joint Functions. Each of the hundred major railway systems, not to mention other types of carriers, handles joint traffic in much the same way as it handles local traffic, despite the fact that the latter traffic constitutes less than a fourth of the total. There are many functions, however, which require the mutual or cooperative action of two or more carriers, such as joint rates, tariffs, through service and routing. There are other functions the exercise of which by a single carrier will directly affect other carriers or the industry as a whole, or the success of which inherently requires cooperation, such as marketing and research. The existence of the unitary nature of these functions demands recognition, and the creation of an integrated agency to discharge them.

126. Pricing. Some degree of integration of pricing functions has come about through the coalescence of commerce and by reason of public control over joint rates and routes. The continued assertion of the "right of individual action" so zealously guarded by the carriers, tends to prevent real cooperation. Pricing of transportation is too vital to the nation's welfare to be left to a hundred or more uncoordinated agencies frequently working at cross purposes. Ratemaking can never become the simple, accurate process which it should be until it rests in the hands of a single carrier agency, just as the power to regulate rates for practical purposes now rests in a single governmental agency.

127. Service. From the facts developed in the survey, it is quite apparent that there is real opportunity for rail managements to achieve economies by reducing the cost of intercarrier routing and interchange.

For some years it has been the policy of carriers to accept and solicit traffic by any route over which they can get it. Routing disputes in carrier rate checks frequently absorb as much time, and considerably more feeling, than the rates themselves. The theory underlying this policy is that a little bit here, there and yonder is better than a big bit in one piece. The evil of the situation can be illustrated by the conditions which exist in Chicago. Omitting Canadian lines, there are 11 predominantly Eastern Carriers and 9 predominantly Western Carriers. Each of these 20 major lines interchanges cars as parts of intercarrier movements with the other 19. Analysis of their 1932 interchanges at Chicago indicates that with little or no change in the amount of business handled by each, the 20 carriers can be grouped into 4 through routes for intercarrier traffic, each of which could function as a single line with respect to solicitation, service, accounting and interline settlements. This process could be carried out at the ten major gateways through which over half of the interterritorial traffic moved in 1932. At the same time a national policy of closing all circuitous routes via interior junctions except for strictly local traffic should be pursued.

A plan such as this does not menace other carriers or service, since routes could not be closed in this manner without the tacit approval, at least, of the Commission. Such a plan of through routing would quickly be followed by operating arrangements, which would greatly reduce, if not eliminate, the present enormous cost of interchange.

The amount of waste, due to multiplication of train service, is liable to be overstated. The train density of railways is comparatively light over practically the entire country. The opportunity for statesmanship in the industry lies not so much in reducing train schedules, as it does in securing a much more frequent service with the present amount of train service. Track utilization in 1932 was not heavy enough to warrant the conclusion that any substantial amount could be eliminated by consolidation of trains over so called trunk lines, since the service on few lines was more than would be required to take care of local needs alone. There is an opportunity, however, greatly to improve service through cooperation.

128. Marketing. The facts developed in the surveys indicate that for some years to come carriers must look to the development of their present markets, rather than to the exploitation of new. Adjustment of service to accomplish this development requires thorough investigation of all sources of production and all outlets of consumption. This task is wholly beyond the power of any one carrier, or indeed of any single type of carriers. It is one which can only be accomplished by the heartiest degree of mutual cooperation of all types of carriers.



129. Independence.. The integration of these common functions of management in the manner suggested involves no surrender of corporate independence or identity. Achieving most of the benefits of consolidation or pooling without incurring their danger, the program suggested leaves unimpaired all other carrier functions of operation and management. The risk of a loss in a carrier proportion of the traffic is one involved in every sort of integration, whether it be consolidation, pooling or traffic agreement.

Since origin and terminal lines, however, receive 2/3 of the total intercarrier revenues the risk of any adverse results from changes of this sort is exaggerated. Free terminals in which all lines are available to all shippers through motorization are inevitable. When that day is reached much of the so called "strategic value" of such locations will disappear and all carriers, as well as all shippers, put upon a level basis of opportunity. Furthermore, the claim that a carrier is responsible for the freight which it delivers another no longer holds true. All it does is to deliver in accordance with the routing, for much of which the solicitation or location of the receiving line is responsible. The situation of the intermediate carrier, particularly the smaller lines, admittedly would be somewhat precarious. Gradually the few carriers, whose traffic is predominately of this character, are being absorbed by terminal lines - a process, which for many reasons of public policy, should be encouraged. So long as this type of carriers continues, however, it is essential that care be taken to protect their interest not only by their managements but by reviewing authority

## XXXIV AGENCIES

130. Agency Coordination. Not the least vicious of the effects of competition of different forms of transport is the encouragement of each to perform services for which its utility is inferior to that of another agency. Generally speaking, from a service standpoint alone, the motor truck is superior to the railway, due to the time which the latter consumes in yards and in assemblage. For distances within 25 miles, and possibly within as much as 75 miles, this superiority is inherent. Certainly beyond 100 miles, however, the railway has the potential superiority to render the faster service. From a cost standpoint the truck is superior to the railway in terminal operation, but the railway to the truck in line operation. Where service and not cost is paramount, the railway, with short train units, can render a much faster and cheaper long distance service. Both the truck and the train are essential to modern transportation. Neither should be permitted to oust the other from the field.

Since depreciation of an investment already made looms so large a factor in pipe line costs, present pipe trunk lines can furnish land transportation for crude petroleum more economically than parallel movements can be furnished by rail. Arrangements for the handling of crude petroleum in cargo lots by railroads should be made in the case of all new fields and new construction of pipe lines avoided. Similarly, gasoline can be handled in full cargo lots more economically and expeditiously by rail than by pipe line. Crude petroleum can be collected by gathering pipe lines much more economically than by any other means. Complete coordination of the two agencies is possible and desirable. A first step in that direction would be rail-pipe joint cargo rates.

Coordination of rail and water and pipe and water facilities can also be resolved by distinct rules. Formerly the railway performed a much greater terminal service than the water carrier. With motorization of terminal they are now placed upon exact equality, hence the relative utility of the two forms of transportation should be gauged by the cost of the line service, including, in the case of rails, intermediate yardings. Water carrier service is of two distinct classes - common carrier service where the sales unit roughly is equivalent to the rail carload unit, and contract (including private operations) where the sales unit approximates a cargo. Examination reveals that the line costs of the carlot (common carrier) water operations in a number of cases, including the Federal Barge Line operations, are as high as the rail line costs. On the other hand, the line costs of the cargo operators in practically every case are considerably below either the present rail line costs or those potential in cargo train operation.

Coordination and stability can be achieved by making the rates of both carlot and cargo shipments (separately) by water or rail, or joint rail and water carriers under a uniform classification in accordance with their respective costs. This will mean that the traffic will move by rail or water, or rail and water, depending on whether the service by rail is sufficiently better to warrant the higher rates. The rail and water cargo rates should be based on the relative service performed by each agency. Rates fixed on any theoretical evaluation of the worth to the shipper of the difference in time are nothing less than an arbitrary distribution of the traffic. The public is entitled to rates measured by the actual cost of performing the service by the two agencies, permitting it to appraise the relative worth of the service at those prices.

Precisely the same method of coordination should be followed in the case of water and pipe lines.



The foregoing suggestions envisage a complete system of transportation with rates based upon the cost of providing it by each agency. Cutthroat practices of handling some traffic as a by-product and hence at the expense of other traffic would in time disappear. Only by such a system of ratemaking can order and stability be brought out of the present disorder.

## XXXV OPERATIONS

131. **Field.** The principle that carrier property is devoted to the public service is nowhere of more importance than in the consideration of the joint use of facilities. The obligation rests upon the managers of the industry to minimize to the greatest possible degree the effect of the present surplus of transport facilities. All facilities of all types of carriers should be made available to all other carriers, to the end that the most serviceable and economical utilization thereof will be made. This applies to line operations, terminals and equipment.

132. **Line.** In view of the amount of overproduction present in today's transport facilities, there rarely is justification for the construction of new freight facilities except to regions now without service. Whenever for any reason a new line penetrating a territory already served is necessary its construction, as far as practicable, should be avoided by trackage rights. In such cases, as well as in some cases of present contracts, the net cost to the industry (as distinct from one or the other of the parties involved) can be avoided through the operation of joint trains. Rail branch lines constitute about one third of the rail mileage. In many cases the chief and in some the only function of these branch lines is to tap an important market on a competing railroad. In view of the high costs of operating these lines, consideration should be given to the abandonment of such branches in the interest of the industry and the public service.

133. **Terminals.** Over half the costs and two thirds of the time of carriers are spent in the terminal. These costs are due in part to the necessity for transfer - and the resultant classification - arising from the lack of yard unification. Accompanying the policy of carrier through routes already discussed, there should be an effort to unify yard operations insofar as intercarrier traffic is concerned, so that this traffic can be handled in what to all intents and purposes are through trains, thereby not only greatly speeding a present sluggish service, but also achieving major economies. The entire question is one now being handled by the Director of Regional Coordination.

134. Equipment. The question of the ownership, operation and pooling of equipment is one which has been handled by the Section of Car Pooling and, therefore, not considered in this report. As has been made evident in earlier parts, however, an essential to transportation is container equipment interchangeable between rail, highway and water carriers, domestic and foreign. The success of this type of operation in large measure will be dependent upon the degree to which it is made universally interchangeable.

## XXXVI EFFECT

135. Owners. Under the proposals hereof the interests of the owner should advance. The present conditions have brought about such instability of investment, much less the return, that millions of dollars invested in rail securities by the public, insurance companies, banks, and trusts are endangered.

To provide stability in carrier securities, it must be provided for the industry. That will not be accomplished by the continuance of warfare in which the carriers are constantly seeking an ephemeral advantage or the protection of an illusory vested right. No single carrier is likely to prosper if the industry collapses, and on the other hand, not many are liable to suffer, if it be prosperous. The question of stability of investment rests largely upon the degree to which the representatives of the owners mutually cooperate.

136. Employees. No class of persons has felt the effect of the breakdown of the industry more seriously than has its labor. In 1920 over 10 percent of the population of the nation depended directly or indirectly upon railway employment. Today it has shrunk to less than half that amount. The reduction in total yearly earnings, particularly among the unskilled employees, has been relatively higher than in many other industries. Due to constant progress in the art and to new transport facilities and instrumentalities which science continues to produce, it is quite possible that much of the personnel in the industry must be reassigned permanently. In many of the suggestions designed to effect economy, made herein, the employees, if not protected by appropriate provision, would initially bear the brunt. Adequate steps to avoid that end should be taken.



Much more important to labor, however, is that stability and security of transportation employment be reestablished and maintained. No real or lasting benefit can be attained by tne industry which will not be reflected immediately in improvement of labor conditions. On the other hand, no law or rule, however stringent, will permanently protect against the inevitable collapse of an unprofitable industry. The greatest opportunity for employees, both in the quantum and stability of their employment, lies in the rehabilitation of the industry itself. When the industry is prostrate, its employees naturally will suffer. When the industry is prosperous, its employees inevitably must prosper.

# Volume 2

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FEDERAL COORDINATOR OF TRANSPORTATION

# FREIGHT TRAFFIC REPORT

FACTUAL SUMMARY OF UNDERLYING DATA

VOLUME II

Section of Transportation Service

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## EXPLANATORY NOTE

The Factual Summary comprises eight summaries, each dealing with one of the underlying surveys, namely, The Carload Shipper Survey, which is referred to for brevity as The Shipper Survey or simply as Shipper; The Railway Carload Traffic Survey, called Railway; The Railway Light Motive Power Survey, called Power; The Transportation Vehicle Survey, or Vehicle; The Freight Station Survey, or Station; The Waterway Traffic Survey, or Waterway; The Petroleum Traffic Survey, or Petroleum; and The Highway Operation Survey, or Highway.

These summaries were written in accordance with a single master outline, the same sectional numeration being used in each as was used in the Freight Traffic Report proper (Volume I). After being written, the several summaries were consolidated under this outline in the manner presented herein.

If desired, each summary may be read as it was written originally, by following the Topical Cross Reference Index, which lists the page of each section of each individual summary consecutively.

To avoid repetition and to maintain consistency, as far as possible certain words and phrases were used in a special, restricted or technical sense in The Report, The Factual Summary and The Statistical Analyses. A Glossary of the words and phrases so used is included herein.

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## GLOSSARY

Absorption of Charges on Freight: Assumption by the carrier of payments incurred for special services or privileges which are deducted from its freight revenue, such as bridge and ferry arbitraries, switching, lighterage and wharfage.

Accessories: Commodity classes embracing completely processed materials convenient and desirable but not indispensable to life, including metals, metal articles, rubber, leather, machinery, tools, vehicles, explosives, stationery, printing, personal sundries and similar articles.

Accounting Division: The primary units into which the system or the railways comprising it are subdivided for the keeping of accounts or statistics of operation separately by primary accounts or by items or subdivisions of primary accounts.

Acquire - Acquisition: To procure or the procurement of facilities or right to occupy or use same, by any means.

Additions: Additional facilities, such as additional equipment, tracks, buildings, bridges and other structures; additions to such facilities, such as extensions to tracks, buildings and other structures; additional ties in existing tracks; and additional devices applied to facilities, such as air brakes applied to cars not previously thus equipped.

Administration: Direction, supervision and control of business and personnel including traffic and general expense.

Advertising: When used in statistical analyses, expense of advertising and with respect to railways expense chargeable to primary account 353.

Agency: When used with respect to transportation expense, the operation of a station for the receipt and delivery of freight traffic, excluding maintenance.

Agency Cars: That proportion of the cars reported by a carrier freight agency or group of freight agencies as handled by such carrier or carriers and influenced in part by the solicitation of such agency or group of agencies, which the total cars handled by carriers in the rate territory, in which such agency or agencies is or are situated, bears to the total cars so reported by all carrier freight agencies in such rate territory.

All Expense and Taxes: See Cost.

Any Quantity Rate: A rate that makes no distinction between carload and less than carload freight.

Apportioned Expense: (Freight) Amount of expense incurred in providing transportation: (a) Common to and apportioned between freight and passenger services in accordance with the order of the Interstate Commerce Commission; and/or (b) common to and apportioned between two or more localities, functions or services in accordance with orders of the carriers' chief accounting officer or in accordance with directions accompanying inquiries of this section.

Apportioned Taxes: (Freight) Amount of tax accruals apportioned between localities, functions, or services in accordance with the proportion which the total operating expense of each bears to the grand total operating expense.

Assemblage: Work or expense in assembling vehicles for or during or after movement, and in the case of railways, chargeable to primary accounts 372 to 375, 377 to 389, 392 to 401, inclusive, and 404, 405 and 406, equated for supervision.

Atlantic Coastwise (and Inland) Water Carriers: Water line operators engaged in coastwise transportation along the Atlantic Coast between Maine and Florida and on tributary rivers and bays.

Atlantic Gulf Water Carriers: Water carriers whose major operations are between the Gulf of Mexico and Atlantic Coastal Ports.

Auxiliaries: Commodity classes embracing materials which have undergone complete processing but which are for use principally or chiefly in construction, building or manufacturing purposes, including masonry material, refined petroleum and its products, chemicals and similar manufactured materials.

Average Haul: As applied to freight, the average distance in miles one ton is carried, computed by dividing the number of ton miles by the number of tons carried, whether for an individual railway or for a group of railways, in either case representing the haul per railway. For the United States as a whole, it is computed by dividing the total ton miles by the tons of freight originated, representing the complete haul by giving effect to the fact that some freight originates on one railway and reaches a destination on another. For rate territories, it is the quotient obtained by dividing the ton miles by the equated, net tons.

Average Load: Quotient obtained by dividing number of tons (excluding l.c.l. freight) originated by a given carrier or group of carriers by the number of carloads originated by such carrier or group of carriers.

Average Load Haul: Quotient obtained by dividing the net ton miles of a given traffic by the loaded car miles utilized in handling such traffic.

Average Revenue Per Car: Quotient obtained by dividing amount of freight revenue for a given period by the number of cars originated during such period.

Average Revenue Per Ton Mile: Quotient obtained by dividing amount of freight revenue either in total or by individual commodities for a given period by the tons of such commodity or commodities carried one mile during such period.

Baggage: All property handled in passenger service except mail and express. It is classified into luggage, commercial baggage, commercial freight and company material.

Base Year: Calendar year 1932 except where otherwise stated.

Benefits: The good, improvement or profit resulting directly or indirectly to a carrier wholly or partly resulting from an increase in revenues, a reduction in expense, or from utility in the performance of service requirements.

Betterments: Improvements of existing facilities through the substitution of superior parts, for inferior parts retired, such as the substitution of steel-tired wheels for cast wheels under equipment, the application of heavier rail in tracks, and the strengthening of bridges by the substitution of heavier members.

Box Car: Car with sides inclosed and having a roof, used for general service and especially for lading which should be protected from the weather.

Branch Line: Continuous section of railway over which a through freight (or passenger) train is not regularly operated each business day.

Caboose: Freight-train car usually attached to the rear of train for the use of trainmen in giving and receiving signals, handling car records and performing other duties. Sometimes used incidentally for passengers, especially livestock caretakers.

Canada Railways: Railways (including American railway corporations) owned, controlled or operated by a company organized under the laws of the Dominion of Canada.

Capital Service: Return accruable on investment in carrier facilities.



Car: Vehicle used by railways for the transportation of freight traffic. Unless otherwise specifically stated, it includes only loaded freight cars upon which freight revenue is accrued, under primary accounts 101, 110, 111, 112 or account VIII "Transportation for Investment Credit".

Cars: Vehicles, conveyances, equipment and/or parts utilized in the transportation of freight traffic.

Car Days: Elapsed time in days of twenty-four hours each between the time a car is placed by the shipper for loading and the time it is released by the consignee after unloading.

Car Float: Vessel equipped with tracks for the purpose of transferring railway cars by water.

Cars Handled: Number of loaded cars moved in line or terminal service by a carrier or group of carriers, counted once for each carrier handling same.

Carload or Car Lot: Shipment of a carload of freight at a rate which is determined by the minimum weight of the shipment for which the carrier will require payment.

Car Maintenance: Work or expense chargeable to primary accounts 312 to 316, inclusive, equated for supervision, plus the freight proportion of primary accounts 503 and 536.

Car Mile: Movement of a freight car one mile. Unless otherwise specifically stated, it includes only the movement of cars loaded with revenue freight one mile.

Cars Originated: Number of loaded revenue cars, the transportation of which is begun on the line of a given carrier or group of carriers or within a given geographic area.

Car Ton Mile: Movement for a distance of one mile of a ton of 2,000 pounds of the weight of train and contents, excluding weight of locomotive and tender.

Cargo: Shipment utilizing the capacity of a ship train or pipe line.

Cargo Carrier: Water private and contract carriers, and pipe line carriers.

Carload: For the purpose of reporting, a shipment of not less than 10,000 pounds of one commodity from one consignor to one consignee. Where mixed carload ratings are provided in classifications or tariffs, a mixed carload is treated as a carload within the meaning of this paragraph, provided such shipment is from one consignor to one consignee at one destination or, in the case of shipments upon which stop-overs are permitted, from one consignor to two or more consignees each at a different destination; and provided the shipment is waybilled at and the charges are collected upon the basis of the carload rate applicable. In such cases the shipment is treated as a carload of that commodity which forms the major portion of the shipment in weight.

Carrier: A common carrier by railway, waterway, airway and, where specially noted, also by highway.

Central East Junctions: Interior points in Central East States where railways interchange freight traffic.

Central East Railways: Class I railways (except where otherwise noted) whose lines lie principally in Central East States. These carriers are listed in Appendix I.

Central East States: New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Ohio, Indiana, Illinois and Michigan.

Central Territory: States of Ohio, Indiana, Illinois, Michigan (south of Great Lakes) and that part of Wisconsin on and east of the Green Bay-Freeport line.

Charges: Rates, fares, prices, allowances, classifications, absorptions and/or any compensation demanded for the performance of any service.

Cheyenne-El Paso Line: Boundary between Western Trunk Line and Southwestern Territories on the one hand and Pacific Southwest Territory on the other from Cheyenne along the Colorado and Southern Railway through Denver and Pueblo to Trinidad; thence along the Atchison, Topeka and Santa Fe Railway through Raton, Santa Fe, Albuquerque to El Paso.

Cheyenne-Ogden Line: Boundary between Pacific Northwest and Pacific Southwest Territories - line of the Union Pacific Railroad from Cheyenne to Ogden.

Circuity: Excess vehicle miles of an actual or composite movement expressed as a percentage of the distance in car miles necessary for the same movement by the most direct route in common use.

Class I Railways: Railways so classed by the Interstate Commerce Commission.

Class of Service: Grouping of carrier services in accordance with location or objective. Location classes of service are: Road, yard and office. Objective classes of service are: Line, terminal and overhead.

Classes of Terminal Service: Grouping of terminal operations with respect to their character. Classes are: Station service; classification of cars; transfer service; interchange and delivery.

Classification Service: Sorting or marshalling of cars in a terminal in station or delivery order.

Commission: Interstate Commerce Commission.

Commission Agency: Agency selling carrier freight service, or soliciting freight traffic for a carrier upon a commission basis of compensation.

Commodity Classes: Grouping of commodities in the report for the purpose of classification into six classes or groups: I. Rough Material; II. Raw Material; III. Semiprocessed Material; IV. Necessaries; V. Auxiliaries; VI. Accessories.

Commodity Groups: Grouping of freight commodities into cognate groups for the purposes of ratemaking and/or statistics. The grouping of freight commodities is shown in Analysis.

Commodity Rating Groups: See Commodity Classes.

Company Service Equipment: Officers' and pay cars, ballast cars, steam shovels, derrick and wrecking cars and other work equipment mounted for movement by rail.

Conduct: To direct, manage, superintend, supervise, operate, maintain, perform, administer or discharge any duty, function or business.

Connection Delivery or Connection Switch Delivery: Cars handled out of the original terminal area by the initial road-haul carrier but originating within such terminal area on the tracks (house, team or industry) of another carrier; or cars handled into the destination terminal area by the final road-haul carrier but terminating within such terminal area on the tracks (house, team or industry) of another carrier.

Consignee: The party to whom freight is billed or forwarded.

Consignor: One who ships freight.

Consolidation: The union of two or more existing corporations into a new corporation, which, through the consolidation, acquires all of the property of the uniting corporations, assumes all of their obligations, and issues its capital stocks in exchange for those of the uniting corporations in ratios fixed in the agreement for consolidation.

Container Car: Flat or drop side gondola cars, suitable for the transportation of containers interchangeable between railway and highway vehicle chassis.



C5 Container: Container interchangeable between railway and highway vehicle chassis, approximately 10 feet long, 8 feet wide and 8 feet high, outside dimensions.

C10 Container: Container interchangeable between railway and highway vehicle chassis, approximately 20 feet long, 8 feet wide and 8 feet high, outside dimensions.

Control: To direct, manage, superintend or supervise any act, work, business or function.

Conveyance: Road transportation, roadway power and car maintenance.

Coordinate: To integrate, unify, harmonize, synchronize carrier facilities, service, operations or charges.

Coordination: The act of coordinating.

Cost: Total outlay, actual or accrued, to provide transportation of freight traffic, including taxes and operating rents paid, but excluding interest or dividends.

Dead Weight: Tare weight of freight vehicles and locomotives.

Delivery: All assemblage operations (classification, transfer, interchange and industrial) involved in originating or terminating cars on tracks (house, team or industry).

Density of a Commodity: Weight in pounds per cubic foot.

Density of Traffic: Amount of traffic measured by train miles, car miles, schedules, schedule miles, gross ton miles, net ton miles, or other appropriate unit per route mile, per schedule mile, per vehicle mile, during a month, year or other period of time.

Depot or Freight Depot: Station where freight is received by a carrier for transportation or is delivered by a carrier to the consignee after transportation.

Depreciation: The loss in service value not restored by current maintenance and incurred in connection with the consumption or prospective retirement of physical property in the course of service from causes against which the carrier is not protected by insurance, which are known to be in current operation, and the effect of which can be forecast with a reasonable approach to accuracy.

Destination: Terminus of the shipment.

Destination Railway: Railway handling shipment for the last part of the road movement.

Direct Expense: Outlay, actual or accrued, solely for the transportation of freight traffic and allocatable, without apportionment, to a single accounting jurisdiction of the carrier.

Direct Freight Charges: As applied to company material, specific freight charges paid to other railways and not included in the invoice.

Directive Cost: Expense incident to the administration and general direction of carrier operations.

Division: The amount of revenues accruing from joint traffic distributable to one or more of the carriers participating in the handling of such traffic.

Division: When applied to pricing or ratemaking, the proportion in which a through or joint rate or charge is divided between participating carriers.

Drag Freight Train: Any through freight train except manifest freight trains.

Dock Expense: Port expenses of a marine carrier, exclusive of station.

East: New England, Trunk Line and Central Freight Association Territories.

Eastbound: The direction of movement as applied to freight cars, including northbound.

Eastern District: New England and Central East States.

Empty Car Miles: Miles run by freight cars without load, excluding company service equipment designed for use exclusively in work service.

Equated Cars: Loaded cars handled by one or more carriers counted but once. For the United States it is deemed to be cars originated. For a single carrier or a group of carriers it is deemed the equivalent of one-half the cars originated and/or terminated by such carriers plus one-half the cars interchanged with other carriers (outside the carrier group). For a rate territory it is deemed the equivalent of that proportion of the cars handled within that territory which the equated cars handled by the carrier group serving such territory is of the cars handled by such carrier group.

Equated for Supervision: Surcharge upon direct primary accounts of a proportion of common supervision accounts. With respect to maintenance of way primary accounts 202 to 272, inclusive, excluding 247 and 248, the surcharge is a proportion of the aggregate charges to common maintenance accounts 201 and 273 to 279, inclusive and 326 to 328, inclusive. With respect to maintenance of equipment accounts 308 to 325, inclusive, the surcharge consists of accounts 301 to 307, inclusive, and 329 to 337, inclusive. With respect to transportation primary accounts 372 to 408, inclusive, excluding 390, 391 and 407, the surcharge consists of accounts 247, 248, 371, 390, 391, 407, 410, to 417, inclusive and 420.

Equated Net Tons: The number of net tons handled by a carrier, group of carriers or in a rate territory counted but once in each case. Computed in the same manner as equated cars.

Equated Ton: Weight of loaded car and contents.

Equated Ton Mile: Movement for a distance of one mile of the weight of loaded cars and their contents.

Equated Track Miles: A constructive item based on a weight of 100 for first main track, 80 for additional main track, and 50 for all other tracks operated; mileage under trackage rights is excluded.

Equipment: Any vehicle, railway, highway or waterway used in freight service.

Equipment Rents: Rents for the use of the equipment of other carriers and private car lines excepting equipment included in the general lease of a road to the operating company.

Expense: Outlay, actual or accrued, incurred in the transportation of freight traffic, exclusive of taxes, rents, interest or dividends.

Expenses of Miscellaneous Operations: The expense of operating miscellaneous physical property not devoted to transportation, the investment in which can be segregated from that in road and equipment. Not to be confused with expenses of miscellaneous railway operations.

Expense Ratio: Quotient obtained by dividing an aggregate expense or expenses of a given service by the amount of revenue received from such service.

Express: Traffic handled or revenues received therefrom by a carrier for the transportation of property in expedited service, and with respect to railway carriers, property handled under express privilege contracts.

Facility - Facilities: Any unit or units of property, real or personal, utilized in carrier service.

Facilities: Any and all instrumentalities, property or things, or parts, used or usable in the transportation of freight traffic.



Field Expense: Gathering and distributing expenses of pipe lines.

Final Road Haul Carrier: Carrier moving a shipment into that terminal area within which the shipment is finally delivered to the consignee.

Financing: Procurement of funds for operative investment or refunding purposes by the issuance, securing, promotion, sale of stocks, bonds, debentures or other obligations of any sort or kind.

First Main Track: As applied to line-haul roads, a single track extending the entire distance between terminals, upon which the length of the road is based, used to effect a line haul and, therefore, kept clear for the passage of trains.

Fixed Property: Carrier property other than equipment.

Floatage: Work or expense chargeable or which would be chargeable to railway primary account 408, equated for supervision.

Flat Car: Freight car having a floor laid over its sills and without any housing or body above.

Foreign Car: Car not owned by the railway by which it is at the time being handled.

Freight - Freight Traffic: All property transported for hire, except mail, baggage and express.

Freight Agency: Branch field office or bureau maintained for the purpose of promoting the sale of freight service. Sometimes called "traffic agency", "outside agency" or "solicitation agency". Two classes of agencies are considered: "On line agency", an agency located in a city directly served by the carrier maintaining the agency and "off line agency", one located in a city not so served.

Freight Car Miles Per Car Day: Total freight car miles, including loaded and empty for a period divided by the average number of freight cars on line, including serviceable and unserviceable, divided by the number of days in the period.

Freight Cars On Line: Home cars, foreign cars and private-line cars, but not cabooses or company service equipment, computed for the month by dividing by three the aggregate count of cars as of the first and fifteenth of the month, and the first of the succeeding month.

Freight Commodities: The articles of commerce grouped in accordance with the Commission's classification of Freight Commodities.

Freight Expense: The amount allocated or apportioned to freight service by primary accounts and in the case of railways in accordance with the order of the Commission for the separation of freight and passenger expenses.

Freight Revenue: Revenue from the transportation of freight and from transit, stop-over, diversion and reconsignment arrangements, upon the basis of tariffs, including the carrier's proportion of revenue on interline shipments. In cases of income statements, it does not include revenues for feeding and icing or advances accruing to other than carriers.

Freight Service Operating Expenses: The sum of the operating expenses directly assignable to the freight service, an apportionment of the expenses common to both freight and passenger, and an apportionment to freight of the expenses neither solely related to nor common to freight and passenger.

Freight Train: A unit or a combination of units or equipment (exclusive of light locomotives), moving over tracks by self-contained motor equipment in connection with the transportation of revenue and company freight, whether loaded or empty.

Freight-Train Car: A freight-carrying car, caboose or other train service equipment required in the operation of a freight train.

Function Cost: A cost distributed in accordance with the nature of the work done, such as maintenance of way, maintenance of power, maintenance of car, transportation, etc.

Gateway: Junction for the interchange of freight of two or more railways of different regional groups and chiefly of interterritorial shipments.

General Expense: Expenses of the executive, administrative, accounting, financial, law, real estate, tax and claim departments of a carrier.

Gondola Car: A car with sides and ends but without a top covering, the floor or bottom being level or approximately so, and used for freight in bulk. Types: High side, low side, drop end, drop bottom, general purpose and convertible.

Great Lakes Southwest Pipe Lines: Pipe lines between the Great Lakes and Oklahoma, Texas, Arkansas and Louisiana.

Great Lakes System Water Carriers: Carriers operating on the Great Lakes, St. Lawrence River System and the New York Barge Canal.

Green Bay-Freeport Line: Boundary between Central Freight and Western Trunk Line rate Territories - along western shore of Green Bay to City of Green Bay; thence along the Chicago & North Western Railway to Menesha; thence along the Minneapolis, St. Paul and Sault Ste. Marie Railway to Fond du Lac; thence along the Chicago & North Western to Watertown; thence along the Chicago, Milwaukee, St. Paul and Pacific Railroad to Madison; thence along the Chicago & North Western to Dodgeville; thence along the Illinois Central Railroad to the Illinois State line.

Gross Ton Mile - Gross Ton Miles, Inc: Movement for a distance of one mile of a ton of 2,000 pounds of the weight of train equipment and contents, including weight of locomotive and tender.

Gross Ton Mile Ex: Same as car ton mile.

Handled or Handling: The receipt, delivery, interchange or intermediate switching of freight traffic in a terminal.

Highway Carrier: A common or contract carrier by highway.

Hire of Freight Cars: Rents paid for the use of freight cars, either of private car lines or of other railways, except for cars included in the general lease of a road to the operating company.

Home Car: A freight car owned or leased. It may include one that is owned or leased by another operating railway in the same system.

Hopper Car: A car with sloping floor which will discharge a major portion or its entire load by gravity through hopper doors.

Hourly Basis: As used in the I.C.C. wage statistics, this term refers to the reporting of the time worked in certain occupations on the basis of the number of hours worked.

Hours (or Days) Paid For: The time of an employee forming the basis for computing his compensation, including straight time actually worked, overtime paid for at pro rata rates, overtime paid for at punitive rates, time paid for but not worked, and constructive allowances (train and engine service).

House Track: Track within a terminal area serving the freight station of a carrier on which and at which cars are loaded and unloaded.

Hudson River Gateways: Points of interchange between New England and Central East railways, such as New York City, Maybrook, Albany, Troy, Rouses Point, etc.



Imports: Goods brought into the Continental United States.

Improvement: Extensions, additions or betterments of any facility.

Incidental Operating Revenue: Revenue from services and facilities, the expenses of the operating and maintenance of which are not separable from rail-line operating expenses, and from incidental sources not provided for otherwise, such as dining and buffet service on trains, hotel and restaurants, concessions, storage, demurrage, telegraph and telephone, elevators, stockyards and power plants.

Industrial Assemblage: Switching of cars on, to or from industry tracks, excluding classification, transfers and interchange.

Industry Track: Track upon which system trains receive or deliver freight to or from patrons under a contract, arrangement or practice, where such patron or group of patrons are served to the exclusion of the general public, such as industrial spur tracks, industrial side tracks, plant facility tracks or industrial connecting tracks.

Initial Road-Haul Carrier: Carrier moving a shipment out of the terminal area within which the shipment is originally received from the consignor.

Inland Waterway Carriers: Carriers operating on the Mississippi, Warrior and tributary rivers.

Intercarrier Traffic: Interline traffic.

Intercarrier Train: Through or joint train operated as a single service over the lines of two or more carriers, usually, but not necessarily, of different regional groups.

Interchange: Transfer of a shipment moving on a through bill of lading over a joint route of two or more carriers from one to another of the carriers whose lines constitute all or part of such joint route.

Intercarrier Interline or Traffic: Traffic handled by two or more road haul carriers.

Interline Shipment or Interline Freight: Shipment moving on a through bill of lading over a joint route composed of the line of two or more carriers.

Interior Junction: Junction for the interchange of freight of two or more railways within the same regional group of carriers.

Intercoastal Water Carriers: Water carriers plying between Atlantic and Pacific Coastal Ports in the United States.

Intermediate Carrier: Carrier other than the origin or destination carrier participating in the movement of interline shipments.

Intermediate Movement: Movement over the line of an intermediate carrier.

Intermediate Switching: Switching within a terminal area of shipments by a carrier upon whose tracks within such area such shipments neither originate nor terminate and which switching carrier is not the road-haul carrier with respect to such shipment either into or out of the terminal area.

Intermediate Terminal: Terminal area within which a shipment is handled but in which it neither originates nor terminates.

Intermediate Traffic: Bridge or overhead traffic handled, neither originated nor terminated, by the carrier (i.e., traffic received from and delivered to connections).

Intermediate Yarding: Any switching, movement or detention in a terminal of a car neither originating nor terminating therein, exclusive of the movement into, out of, or through the terminal in road trains.

Interterritorial Traffic: Traffic originated in one rate territory and terminated in a different rate territory.

Intraterritorial Traffic: Traffic originated and terminated within the same rate territory.

Joint Facilities: Any carrier facility used jointly or in common by two or more carriers.

Joint Facility Rent: Rent for the use of yards, tracks, stations, terminals and other facilities, used in common with the owner or other tenants.

Joint Revenues: Revenues accruing from joint traffic.

Joint Traffic: The transportation of freight traffic in which the services of two or more carriers are employed.

Legislation: When applied to pricing or ratemaking, any function directly or indirectly connected with the making of rates.

Light Freight Train: A train consisting of a locomotive and caboose, running without other cars in connection with freight-train service.

Line Cost: Cost of providing line service.

Line Service: All road service and yard service at intermediate terminal areas, including station service incident to both.

Loaded Car: A railway car under load (carload or l.c.l.).

Local Traffic: Traffic handled by a single road-naul carrier.

Locational Cost: A cost distributed according to the place where the work is done, such as main line, branch line, yard and road.

Locomotive: A self-propelled unit of equipment designed solely for moving other equipment. A light locomotive is one moving under its own power, not coupled to cars.

Locomotive Day: Twenty-four hours of the time of one of the number of locomotives in service whether owned, leased or rented, excluding owned locomotives in service on other roads.

Locomotive Maintenance Expense: Amounts chargeable to Commission's primary accounts 308 to 313, inclusive.

Locomotive Mile: The movement of a locomotive a distance of one mile under its own power.

Locomotives On Line: The number owned, leased or rented in service (excluding owned locomotives in service on other roads), computed for the month by dividing the total number of locomotive days of 24 hours by the number of calendar days in the month.

Locomotive Ton Mile: Movement of the weight of the locomotive and tender a distance of one mile.

Mail - Mail Traffic: The transportation of letters, papers, parcels and other property contained in the public post.

Main Line: A continuous section of railway over which one or more through freight or (through passenger) train is regularly operated every business day

Main Line Train: Train operated on main lines.

Maintain - Maintenance: To repair, renew or replace facilities or the act thereof.

Maintenance: The act (repair, replacement, renewal) of continuously and currently keeping carrier property, as a whole or parts thereof, in a condition for efficient operative utilization.



Maintenance Expense: The outlay, actual or accrued, necessary for maintenance. It includes the expense of repairs, renewals, replacement, depreciation and retirements.

Major Terminal District: All common switching areas (excluding metropolitan terminal districts) where one or more switching crews were employed by a carrier during the greater part of the year 1932, in each of the rate territories (q. v.) grouped into one major terminal district for such rate territory. A station may be a major terminal area on the line of one carrier and a minor terminal area upon another carrier, depending upon whether or not switching crews were employed during 1932.

Manifest Freight Train: Through freight train, the cars or character of equipment handled of which is limited because of the speed at which the train is scheduled or regularly operated.

Metropolitan Area: A city and all surrounding territory, cities, towns and suburbs which with it constitute a social, economic, retail trade and physiographic unit connected by a system or systems of suburban service.

Metropolitan Terminal District: One of the specifically named terminal areas ordinarily embracing one or more cities of 100 thousand inhabitants or more, together with the entire area, rural and urban, embraced within the carrier's terminal operating area within which such city or cities is (or are) situated.

Middle Atlantic States: New York, New Jersey, Pennsylvania, Delaware, Maryland and District of Columbia.

Miles of Route: See Route Miles.

Minimum Carload Weight: The lowest weight upon which a carload rate is applicable.

Minor Terminal District: All stations at which freight was collected or delivered during the year 1932 but at which no switching crews were employed by the reporting carrier. Within each rate territory (q. v.) are grouped into a single minor terminal district for such rate territory. A station may be a minor terminal on the line of one carrier and a major terminal area on another carrier, depending upon whether or not switching crews were employed during 1932.

Miscellaneous (Railway) Operations Expenses: Expenses incurred in conducting dining and buffet service, hotels and restaurants, grain elevators, stockyards, production of power for sale, cotton compress plants, ice supply plants, etc., when the cost of facilities is includible in the road and equipment accounts and all or a proportion of the expense is assignable to commercial operations. Not to be confused with expenses of miscellaneous operations.

Mixed Train: A train run regularly for the transportation of freight and passenger traffic.

Multiple Carrier Terminal Delivery: Delivery of a shipment within a terminal area involving switching by two or more carriers.

Necessaries: Commodity classes embracing the necessaries of life which have undergone practically complete processing including dried vegetables, syrups, oils, animal products, groceries, flour and meal, beverages, furniture and furnishings, textiles, clothing and similar necessaries.

Net Ton Mile: Movement of a ton of revenue freight of 2,000 pounds a distance of one mile.

New England Junction: Interior junctions in New England where freight shipments are interchanged.

New England Railways: Railways whose lines lie principally in New England States. They are listed in Appendix I.

New England States: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

New England Territory: States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

North Atlantic Coast Pipe Lines: Pipe lines between North Atlantic Seaboard, Great Lakes and Eastern Ohio.

Northwest Junction: Interior junction in Northwest States where freight shipments are interchanged.

Northwest Railways: Railways whose lines lie principally in Northwest States.

Northwest States: Western Trunk Line and Pacific Northwest territories.

Obligation: Any debt, liability or indebtedness, owing, accrued or claimed.

Off Line Agency: Traffic agency located in a city not directly served by the carrier maintaining the agency. See Agency.

On Line Agency: Traffic agency located in a city directly served by the carrier maintaining the agency. See Agency.

On Track Industry: Industry served by a railway directly through an industry track.

Operating District: Grouping of operating divisions of all railways in various States into a single group. In cases where an operating division embraces lines in more than one State, it is placed in the district of the State wherein its preponderant mileage lies.

Operating Division: Smallest segment of a railway for which operating statistics are separately kept.

Operating Expense: Expense of furnishing transportation, including maintenance of fixed property and equipment used therein.

Operating Ratio: Quotient obtained by dividing operating expenses by operating revenues.

Operating Rents: Equipment and joint facility rents.

Operating Reserves: Reserves created by charges to operating expenses for maintenance of road and equipment, for personal injury, loss and damage and other claims and for similar purposes, such charges being made currently for the purpose of equalizing charges to operating accounts from month to month.

Operating Revenue: Revenue receivable for freight transportation.

Ordinary Freight Train: A train consisting of a locomotive, with or without caboose, with other freight-train cars.

Origin Railway: Railway issuing bill of lading and upon which the shipment is first moved in road-haul service.

Originated Traffic: The initial receipt of freight traffic by a carrier from the shipper.

Overall Speed: Quotient obtained by dividing the number of miles by the number of hours elapsing between the movement from the place where vehicle is loaded by consignor to the place where unloaded by consignee.

Overhead Cost: Administration and tax cost.



Pacific Coast Pipe Lines: Pipe lines in California.

Pacific Coastwise (and Inland) Water Carriers: Water line operators engaged in coastwise transportation along the Pacific Coast between Puget Sound and Southern California and on tributary rivers and bays.

Pacific Northwest Territory: States of Washington, Oregon, Idaho, Montana and that part of Wyoming north of Cheyenne-Ogden line.

Pacific Southwest Territory: States of California, Nevada, Utah, Arizona, that part of Wyoming on and south of Cheyenne-Ogden line and that part of Colorado and New Mexico west of Cheyenne-El Paso line.

Passenger Revenue: Revenue receivable for the transportation of passengers, including tariff fares, extra fares, reserved car surcharge and additional fares for exclusive use of space.

Passenger Service: Transportation of persons and property in carrier passenger trains or vehicles.

Passenger Service Expense: Expense of transporting persons and property in carrier passenger service.

Passenger Service Revenue: Revenue receivable for the transportation of persons and property in carrier passenger service.

Passenger Traffic: Persons handled in passenger service.

Peddler Car: A car containing freight from one shipper from which the contents are distributed en route at various intermediate points.

Per Diem: See Hire of Freight Cars.

Per Diem Reclaim: An exemption of switching and terminal roads from payment for car hire for a specified number of days to protect their switching revenue.

Platform Cost: The cost of handling l.c.l. freight between freight house, platform and cars.

Pocahontas Territory: States of Virginia and West Virginia.

Power Maintenance: Work or expense of maintaining power and in the case of railways chargeable to primary accounts 231 to 236, inclusive, 308 to 313, inclusive, 323 to 325, inclusive, all equated for supervision.

Proportional Rate: A specific rate to or from a basing point for combination with other proportional or local rates to form a through rate.

Pricing: Making of rates for the transportation of freight traffic and the promulgation and publication of tariffs for the carriers thereof.

Primary Account: One of the expenditure accounts of the Commission's Classification of income or operating expense accounts.

Primary Commodity Groups: Grouping of commodities into cognate groups. The compositions of these commodity groups are shown in Analysis.

Products: Goods produced in the Continental United States.

Promulgate - Promulgation: To make, determine, establish, provide and/or publish, or the act thereof.

Rail-Line Transportation Revenue: Revenue from transportation in trains, from switching service, and from local water transfer service, necessary to complete a rail movement. It does not include incidental operations such as the furnishing of meals, storage of freight, etc.

Railway: A common carrier by railway; and unless otherwise noted a Class I railway.

Rate Ceiling: Maximum rate which carriers can charge without unduly restricting the movement of freight traffic either because of inherent price or because of the availability of a cheaper mode of transportation by the shipper.

Rate Territory: A geographic division of the country for ratemaking purposes or for railway joint freight traffic bureaus or associations. The rate territories used are: New England; Eastern Trunk Line; Central Freight Association; Pocahontas; Southern Freight; Western Trunk Line; Southwestern; Pacific Northwest; and Pacific Southwest.

Raw Materials: Commodity classes embracing grain, fresh vegetables, live animals, coal and coke, crude liquids, ores, lumber, fertilizer and similar raw materials.

Rebilling: Issuing an additional waybill to extend or complete the final haul of freight.

Reciprocal Switching Rate: A rate charged one carrier by another carrier, usually lower than the commercial rate, for switching inbound or outbound carloads customarily absorbed by the line-haul carrier.

Reconsignment of Cars: Changing in accordance with tariff provisions, shipments consigned to one consignee or one destination to another consignee or destination.

Regional Group: When applied to states, means a homogeneous area of the United States, comprising two or more states and when applied to railways, means a group of railways whose lines chiefly serve the same regional group of states.

Released Rate: A rate based on a limitation of the carrier's liability for loss and damage, and therefore less than a rate applying without such limitation.

Rents: Equipment and joint facility rents.

Reported Tonnage: Tonnage reported by railways, boat lines, pipe lines or shippers in response to inquiries of the Section.

Reporting Carriers: Railways, highway and waterway carriers answering the questionnaires respectively relating to them.

Reporting Shippers: Shippers replying to the Shipper Carload Traffic Survey.

Revenue: Amount of money which a carrier becomes entitled to receive from transportation and operations incident thereto.

Revenue Car: Car containing a shipment or shipments transported by a carrier for hire.

Revenue Freight: A local or interline shipment from which earnings accrue to the carrier upon the basis of tariff rates.

Revenue Freight Carried: Shipments of revenue freight originated on the line, or received from connecting carriers.

Revenue Freight Originated: Shipments not identified as having had previous line-haul transportation by other rail carriers, including import traffic and traffic from outlying possessions of the United States received from water carriers at the port of entry, finished products from transit points, and shipments rerouted from concentration points.

Revenue Freight Terminated: Shipments delivered directly or indirectly to consignees, not identified as subject to further line-haul transportation; and including export traffic and traffic destined to outlying possessions of the United States delivered to water carriers at the port of clearance, and products delivered at transit points for finishing processes.

Revenue Ratio: Quotient obtained by dividing a given expense by the total carrier revenue.

Revenue Shipment: Shipment transported by a carrier for hire.

Revenue Tons: Tons of shipment or shipments transported by a carrier for hire.

Road Cost: Cost of providing road service.

Road Haul: Movement of a shipment from one terminal area to another terminal area.

Road-Haul Carrier: Carrier moving a shipment between terminal areas.

Road-Haul Interchange: Interchange between carriers, within a terminal area, of shipments which neither originated nor terminated within such area.

Road Maintenance: Work of maintaining a carrier's road, and in the case of railways, expense of which is chargeable to primary accounts 249 to 272, inclusive, 229, 230, 259 to 272, inclusive, all equated for supervision.

Road Service: Movement of a shipment between terminal areas.

Road Service Expense: Road Transportation.

Road Train to Road Train Cars: Cars arriving in a terminal area in a carrier's road train and moving out of the same terminal area in the road train of the same carrier.

Road Transportation: Work or expense of moving freight between terminals and in the case of railways chargeable to primary accounts 372, 392 to 401, inclusive, 404, 405 and 406, equated for supervision.

Rough Materials: Commodity classes embracing sand, stone, gravel, logs, piling, timber, sugar beets and similar commodities.

Route Miles: Number of miles over which a carrier regularly operates freight service.

Routing: The determination, prescription, establishment of through or joint routes, the provision of reasonable facilities, rules and regulations for operating same, and the carriers or junctions over or through which joint traffic shall flow.

St. Louis-Kansas City Line: Boundary between Western Trunk Line and Southwestern Territories - along the Missouri Pacific Railroad to Labadie, Missouri; thence along the Chicago, Rock Island and Pacific Railway to Kansas City.

Sales Organization: The arrangement and systemization of sales functions and carrier personnel into a unit designed to promote the sale of freight service.

Sales Promotion: Promotion of a carrier sales organization to the end that it will ascertain and arrange for the satisfaction of the service and price requirements of shippers and receivers of freight; locate, appraise, contact and develop freight traffic markets; disseminate freight traffic service information; arouse and stimulate the transportation of freight traffic; and thereby incite the purchase of carrier service.

Schedule: The integrated movement of one or more carrier vehicles, such as a train, tow, boat, truck or tractor with or without trailers.

Schedule Mile: Movement of a schedule one mile.

Selling Expense: Expense of directing or supervising the solicitation of carrier traffic.

Semiprocessed Materials: Commodity classes embracing metals (in pig, ingot, etc.) fibres (cotton, wool, etc.) hides and crude rubber, salt, ice first processed paper products, horticultural supplies and materials, scrap materials and similar commodities.

Service - Services: Any operation, method, practice, function or act performed by or incident to the transportation of freight traffic, wholly or partly by carriers.

Service Cost: A cost distributed in accordance with the service objective of the expenditure, such as passenger, freight, line and terminal.

Service Unit: A transportation using measuring service rendered such as tons, cars, ton miles, car miles, train miles, etc.

Service Unit Cost: Quotient of aggregate cost of a given operation and the number of particular service unit.

Shipment: Consignment of freight transported by a carrier for hire from one consignor to one consignee.

Shipments Originated: Number of shipments, the transportation of which is begun on the line of a given carrier or group of carriers or within a given geographic area.

Single Carrier Terminal Delivery: Terminal delivery in which switching of a single carrier is involved.

Solicitation: Effort to incite the purchase of a particular carrier service.

South - Southeast - Southern District: Pocahontas and Southern Freight Territories.

Southeast Junctions: Interior junctions in Southeast States at which railways interchange freight shipments.

Southeast Railways: Railways whose lines lie principally in the Southeast States.

Southeast States: West Virginia, Virginia, North and South Carolina, Georgia, Kentucky, Alabama, Florida, Tennessee and Mississippi.

Southeastern Territory: States of Kentucky, Tennessee, North and South Carolina, Georgia, Flo[illegible], Alabama, Mississippi and that part of Louisiana east of the Mississippi Rive[illegible].

Southwest Gulf Pipe Lines: Pipe lines between Oklahoma, Arkansas, Louisiana and Texas, and the Gulf of Mexico.

Southwest Junctions: Interior junctions in Southwest States at which railways interchange freight traffic.

Southwest Railways: Railways whose lines lie principally in the Southwest States.

Southwest States: Southwestern and Pacific Southwest States.

Southwestern Territory: States of Arkansas, Oklahoma, Texas and that part of Missouri south of St. Louis-Kansas City line, that part of Louisiana west of Mississippi River and that part of New Mexico on and east of Cheyenne-El Paso line.

Speed: Miles per hour of train or vehicle.



Spotting Cars: Switching to a specified location.

Standards: Determination, prescription and establishment of rules, norms, patterns, models, types and criterion for the acquisition, conduct, maintenance, improvement and operation of facilities or service.

Station Expense: Expense of maintaining stations and facilities; of station employees; and of transportation other than yard or road haul.

Station Maintenance: Work or expense of maintaining stations and in the case of railways chargeable to primary accounts 227 and 228, equated for supervision.

Station Terminal Service: Work of billing, receiving and delivering freight between carrier and shipper or between carriers.

Station Agency or Transportation: Work or expense of conducting business at stations and in the case of railways chargeable to primary accounts 373, 374 and 376, equated for supervision.

Switch Engine: Engine assigned for the movement of switching of cars within a terminal area or district.

Switch Engine Hours: Elapsed time, actual or constructive, for which switch engine crews are paid.

Switching Locomotive Miles: Mileage allowed train locomotives for performing switching service at terminals and way station and to yard locomotives in switching yards and at terminals including transfer service. Computed at the rate of 6 miles per hour for the time actually engaged in the service, a fraction of one-half hour or more to be taken as one hour.

Switching Paid: Amount paid by rail carriers to common rail carriers for switching cars to the final unloading tracks or from the origin loading track and also the amount paid for drayage to others than the shipper or consignee.

Tariff: A published schedule showing the rates, fares, charges, classification of freight, rules and regulations, applying to the various kinds of transportation and incidental services.

Taxes: Taxes imposed by any form of government whether based on an assessed value of the property, amount of stocks or bonds, earnings, income, dividends declared, (number of passengers) quantity of freight, length of road, rolling stock or other basis. It does not include special assessments for street and other improvements, nor special benefit taxes, such as water assessments.

Team Track: Track within a terminal area upon which cars are loaded and unloaded on, to or from trucks or wagons and drayed to or from the warehouse of the consignor or consignee.

Tenant Company: A carrier participating in the joint use of tracks, yards, terminals and other facilities under a contract licensing such use but not granting exclusive possession.

Terminal Allowance: Amount paid by a rail carrier to others than rail carriers for any service performed in connection with the collection, delivery, switching or unloading of cars on industry tracks served by such rail carrier, including plant facility allowances.

Terminal Cars - Terminaling: The origination or termination of a car in a terminal.

Terminal Cost: Cost of providing terminal service.

Terminal District: Terminal area within which freight traffic is originated or terminated by the carrier. Terminal districts are of three classes: Metropolitan terminal districts; major terminal districts; and minor terminal districts.

Terminal Service: Yard service at origin and destination of a shipment.

Terminated Traffic: Traffic delivered by the carrier to the consignee.

Terminating Carrier: Final road-haul carrier (carrier possessing the waybill) of traffic terminated either upon the line of such carrier or by a connection switching delivery for its account.

Terminating Railway: See destination railway.

Through Train: (Freight or passenger). A train whose crew is paid "through" rates of pay.

Ton Mile: Movement of a ton of 2,000 pounds a distance of one mile. Unless otherwise stated or limited, it means net ton miles.

Ton-Mile Revenue: Amount of freight revenue divided by the number of net ton miles.

Tons Originated: Number of tons, the transportation of which is begun on the line of a given carrier or group of carriers or within a given geographic area.

Trackage Rights: Permission to use tracks operated by others for the movement of trains, but without exclusive possession. Also called running rights.

Trade Area: One of the 701 geographic areas into which the United States is divided from the standpoint of distribution or consumption of commodities. The areas used are those made by the International Magazine Company and adopted by the Research Division of the National Recovery Administration.

Trade Center: Principal or market town located within a trade area.

Traffic: Shipments of freight.

Traffic Expense: Expense of carrier sales promotion. With respect to railway carriers, it embraces the expenditures chargeable to primary accounts 351 to 359, inclusive.

Train: A unit or combination of units of railway equipment in condition for self-propelled movement over railway tracks.

Train Expense: Work or expense of moving freight between terminals and in the case of railways, chargeable to primary accounts 372, 392 to 401, inclusive, 404, 405 and 406, equated for supervision.

Train Hour: Elapsed time of freight trains and a proportion of elapsed time of mixed trains based on car miles in such trains between the time of leaving the initial terminal and the time of arrival at final terminal, including delays on the road, as shown by conductors' train reports or dispatchers' train sheets.

Train Mile: Movement of a train one mile.

Train Switching: Switching service performed by train locomotives at terminals and way stations. See Switching Locomotive Miles.

Transcontinent Gateways: Junctions at which western carriers interchange interterritorial shipments with eastern and southeastern carriers. The principal gateways are Chicago, St. Louis, Memphis, Helena, Natchez and New Orleans.

Transportation Expense: Expense of transporting persons and property exclusive only of maintenance and overhead expense - the expense of utilizing carrier facilities.



Transfer Service: Movement of cars from one track of a carrier to another track of a carrier not located in the same classification yard.

Transit Point: An intermediate point at which freight is held for finishing processes or other treatment.

Transport Charges: Amount charged by a carrier, common or contract for the transportation of freight, excluding any drayage or accessorial charges.

Transwest Gateways: Junctions at which northwest and southwest railways interchange interterritorial shipments. The principal junctions are St. Louis, Kansas City and Denver.

Trap Car: A car used within terminal limits for assembling and distributing, as a carload, l.c.l. shipments to or from private sidings of industries.

Trunk Line Territory: States of Delaware, Maryland, New Jersey, New York, Pennsylvania and District of Columbia.

Type of Service: Grouping of carrier services in accordance with the instrumentality used to perform it. Types of rail carrier service are: Through freight train, manifest freight train, drag freight train, main line way freight train and branch line way freight train.

Undercharges: Charges for transportation services, which are less than those applicable thereto under the tariffs lawfully on file with the Commission.

Vehicle: Any means or instrumentality of freight carriers including cars, automobiles, trucks, ships, tows and airplanes.

Vehicle Maintenance: Cost of maintenance of vehicles including depreciation, repairs and retirements. See Car Maintenance.

Vehicle Miles: Movement of a vehicle one mile.

Vehicle Ton Mile: Movement of the weight in tons of 2,000 pounds each of a vehicle and contents within a given schedule.

Water Common Carrier: Licensed carrier operating definite schedules over regular routes.

Water Contract Carrier: Carrier who procures cargo loads on contract basis rather than on the basis of published rates and who operates without definite schedules or regular routes.

Water Private Carrier: Carrier who has no regular schedules, routes or services and who handles shipments only of itself and affiliated companies.

Waybill: A form accompanying a shipment of freight showing the forwarding and receiving stations, the names and addresses of consignor and consignee, the car initials and number, the routing, the description and weight of the commodity, instructions for special services, the freight rate, total charges advances for previous services and the amount prepaid.

Way Freight Train: Freight train whose crew is paid at local or way freight rates of pay.

West: Western Trunk Line, Southwest, Pacific Northwest and Pacific Southwest Freight Territories.

Westbound: The direction of movement as applied to freight cars, including southbound.

Western Railways: Railways whose lines lie principally in the Western States. They are listed in Appendix I.

Western States - Western District: Northwestern and Southwestern States.

Western Trunk Line Territory: States of North and South Dakota, Minnesota, Nebraska, Kansas, Iowa, that part of Michigan north of Great Lakes, that part of Wisconsin west of Green Bay-Freeport line, that part of Missouri on and north of St. Louis-Kansas City line and that part of Wyoming and Colorado on south and east of Cheyenne-El Paso line.

Wharves and Dock Expense: Work or expense of maintaining wharves and docks and in the case of railways chargeable to primary accounts 241 to 244, inclusive, equated for supervision.

Yard: An area of tracks within the limits of which switching service is performed.

Yard Cost: Yard expense and taxes.

Yard Expense: Expense of performing yard services. It includes yard maintenance, station maintenance and operations; freight car service, power maintenance, yard transportation, expense of floating equipment and expense of wharves and docks.

Yard Maintenance: Work of maintaining carrier's terminal facilities and in the case of railways, the expense of which is chargeable to primary accounts 202 to 226, inclusive, 229, 230, 251 to 272, inclusive, all equated for supervision.

Yard Service: Movement, detention or servicing of shipments within a terminal area.

Yard Switching: Switching service performed by yard locomotives in yards where regular switching service is maintained, including terminal switching and transfer service in connection with the transportation of revenue freight and incidentally of company freight. See Train Switching.

Yard Track: Track, within the limits of a yard, used exclusively to effect switching service, provide storage of cars and serve other terminal purposes. Track extending through the yard, used as part of the main line, although used incidentally for switching movements, is not classed as yard track.

Yard Transportation: Work or expense in assembling vehicles for, during or after movement, and in case of railways chargeable to primary accounts 372 to 401, inclusive, and 404, 405 and 406, equated for supervision.

# FEDERAL COORDINATOR OF TRANSPORTATION

## Section of Transportation Service

## FACTUAL SUMMARY OF UNDERLYING DATA

## THE TRAFFIC

### I THE UNDERLYING SURVEYS

### 1. Description of Underlying Surveys

General

The Report deals with the transportation of freight within the continental United States. Except where necessitated by the nature of the operations under review, less than carload traffic is not included within the scope of the surveys.

Freight traffic is transported in trains of freight cars moved on railways; by motor vehicles on highways; by steamships and barges upon the ocean, lakes, rivers and canals; and by pressure in pipe lines. Practically all rail freight transportation is provided by common carriers. Transportation by water is conducted by common and contract carriers and by private owners of the freight transported. Pipe line transportation is provided by common carriers generally, although the bulk of the freight transported is owned by companies affiliated with the owners of the pipe lines. Common carriage of freight by highway is confined largely to merchandise traffic, the bulk of other freight being transported either by contract carriers or by the owners of the goods.

Joint rate and route arrangements for intercarrier movement of freight generally prevail between carriers of the same type and but rarely with carriers of different type, except in the case of railway and waterway carriers, where such arrangements are quite prevalent.

Shipper — In 1934 the Section sent out to approximately 40 thousand carload shippers an elaborate inquiry seeking rather complete information of their traffic movement during the year 1933. The list to whom this inquiry was mailed was compiled from the data made available from replies to the merchandise inquiry which had been sent to a much larger list (100 thousand), supplemented by all other lists available to the Section. The inquiry was one, the answers to which, in many cases, required extended work upon the part of the shipper. Instances were found where shippers voluntarily expended several thousand dollars to furnish the information requested.

Railway — In 1933 the Section submitted to Class I railways and Class I switching and terminal companies* the rail carload traffic inquiry, which sought to survey rail freight traffic# with respect to its volume, origin, destination, distribution by freight commodities, services accorded it, line and terminal, and the cost, aggregate and unit, of providing such services. The inquiry was divided into three general sections:

First, a traffic analysis showing (1) commodity deliveries, by class of track service, by terminal districts; (2) commodity revenues and service units; and (3) traffic interchange by carriers and junctions.

Second, a yard and car service analysis showing (1) utilization (cars originated, terminated, interchanged or intermediately yarded) of yards (terminals); and (2) detailed operative and car service history of each car terminated in the United States on December 13, 1933, and particularly its origin, origin track service, commodity, destination, destination track service, revenue, car miles (direct and actual), tons, ton miles, reconsignments, interchanges, and time (loaded car days) detained by patrons at origin and destination, and by the carrier in origin and destination terminals, and in each intermediate yard en route, as well as its time in road trains.

Third, an operating cost analysis by terminal districts showing (1) the road service and costs separately for main line, manifest, drag and way trains, and for branch line trains; and (2) the yard service and unit separately for cars originated or terminated on the road haul carrier's house, team and industry tracks, for cars reciprocally switched to or from such initial or final tracks, and for cars interchanged or intermediately yarded in such terminals.

* These carriers are listed in analyses 1.1 to 1.3 inclusive.

\# Except insofar as necessary in order to account for joint freight service and costs, l.c.l. or merchandise freight, with respect to which a previous report has been made, is not included.



Power — Data were obtained from manufacturers in the railway industry, locomotive builders, car builders and accessory equipment manufacturers, and builders of the internal combustion engines primarily of the Diesel type, in the United States, Canada, England and continental Europe.

Study was made of the feasibility of using the Diesel engine with electrical, mechanical and hydraulic transmission. In this search various types of engines and transmissions were investigated, as well as modern forms of high pressure steam engine equipment.

Since there were no precedents in successful operation of Diesel-mechanical drive, in the United States, other than one or two isolated cases of small capacity horsepower equipment, information was sought in England, France, Germany, Switzerland, Hungary, Italy, Sweden and Denmark, from manufacturers who were identified in building mechanical transmissions for Diesel traction.

The possibility of freight power cars with one, two or three trailers and moved by mechanical small Diesel-electric and high-pressure steam plants, using booster type locomotive also was investigated.

Vehicle — The study of freight transport vehicles other than motive power units starts with the present freight cars of standard design, covers recent developments in improved car design, and then describes other vehicles which have been developed for transporting freight by rail, highway and water without breaking bulk during the entire journey. The description of these vehicles which are designed to coordinate transportation service is given under the following headings: Containers and container transfer equipment; highway vehicles on freight cars; and dual service vehicles.

The several types of equipment have been studied in actual operation and from drawings, descriptions and models, by members of the Commission and the Coordinator's staff. Information covering the development of such equipment abroad is available from the International Container Bureau, transport agencies, and in a recent publication of the U. S. Department of Commerce entitled, "Railway and Highway Transportation Abroad". Inventors were invited to submit their designs, which they did freely and in detail. Undoubtedly some equipment has not been included in the survey and report, but it is believed that all equipment which is being regularly operated or is in actual experimental operation has been included.

Station — In connection with a survey made by Mr. F. J. Ginn, Class I carriers, in reply to an inquiry addressed to them, generally furnished information as to their methods in billing carload and less than carload traffic including that done by shippers; the rating, assessing and collecting of freight charges; station accounting, whether done at the station, in division or general offices, or in coordination with other accounting work; the physical handling of traffic; economics of station location, i.e., points at which stations should be located and station classification from the standpoint of duties, personnel and routines. Practices of recent adoption which were efficient and economical and those of longer use which were considered outstanding were featured and others under consideration which were believed to be advanced steps were brought out.

Waterway — The survey of freight transportation by waterlines covered only domestic water carriers. Foreign commerce to or from the United States was excluded. Questionnaires were sent to all known operators of domestic water services, including inland waterway, coastwise, intercoastal, and Pacific Coast-Alaska routes. Replies were received from over 200 companies. With but a few exceptions, all important common carriers responded. Contract carriers and private operators did not reply in like number, but responses were received from the more important. The survey covered the equipment and physical property owned and used, routes and services, tonnage handled, revenues collected, expenses incurred, and financial results obtained.

Petroleum — The survey of petroleum traffic is based upon a number of diverse sources. Among the principal sources are: The Report on Pipe Lines, prepared by Dr. W. M. W. Splawn, and published as House Report No. 2192, 72d Congress, 2d Session, 1933; the annual reports of pipe line companies reporting to the Interstate Commerce Commission; the statistical summaries of railroad and pipe lines prepared by the Bureau of Statistics of the Interstate Commerce Commission; the reports of the Bureau of Research, United States Shipping Board; the Commercial Statistics of Waterborne Commerce of the United States compiled and published by the Chief of Engineers of the United States Army; the reports of the Federal Oil Conservation Board to the President of the United States; the publications of the U. S. Department of Commerce, Bureau of Mines; the analysis of the returns of rail, water and pipe line companies and shippers to the questionnaires of the Federal Coordinator of Transportation; and statistical data with respect to the number of barrel miles of petroleum traffic transported by individual companies recorded by the companies in response to an inquiry of the Federal Coordinator of Transportation.



Highway — It was not possible to obtain information covering highway freight operations in the same manner that was employed with respect to the railways, inasmuch as no truck operations are subject to Federal regulation or supervision. While the lack of similar information with respect to highway transportation leaves much to be desired, considerable data on highway freight operations were obtained through several sources. The information in each instance is a sample deemed to be sufficient to typify the several phases of highway transportation which have been covered. Information was obtained primarily from two inquiries, the first being addressed to motor truck operators throughout the United States. The replies from intercity common, contract and private operators, as well as city draymen, are summarized in exhibits 117 A1 to T of the Section's Merchandise Traffic Report. The second inquiry was addressed to firms included in the shipper's survey described herein.

A field survey was conducted at several of the largest cities, observing the performance of all principal operators in each terminal area with particular attention paid to different types of equipment and their use, such as burden carrying trucks, tractor semitrailer single units and multiple semitrailers, and demountable bodies employed in connection with trucks and with semitrailers. Every distinctive type of operation was investigated, and full operating cost and performance statistics were made available in most instances.

Highway truck operations were also studied by the Coordinator's Section of Research, primarily in connection with the questions of regulation and subsidy, but information with respect to operating costs of highway freight service was also developed and is included in this report.

The second study involved the analysis by the Section of Research of additional data furnished by the same operators in reply to the motor truck survey, weighted average values of all important elements of truck costs being developed for several vehicle gross weight groups, the group data plotted, and curves fitted. Equations expressing the relation of each cost element to gross weight resulted, which applied to highway vehicles of different capacities, produced the costs shown in analysis 75.6 A report on the results of this study was made by Mr. Warner Tufts of the Section of Research.

A comparison of the results obtained by these three studies shows them to be in substantial agreement. The highway costs used as the basis for conclusions in this report are shown in analysis 75.6, in which terminal costs closely approximate the results obtained in the terminal trucking study, while costs for "over-the-road" highway movements are in substantial harmony with the complete (arithmetical) average experience reported to the Coordinator by many individual highway operators and summarized in the Merchandise Traffic Report.

## 2. Objectives of The Surveys

Shipper — The Shipper inquiry sought to obtain from the shippers: (1) A description of the agency through which they received their traffic information; (2) the nature of their contacts with carriers, operative and sales; (3) the considerations affecting the routing of traffic; (4) the reason for using truck transportation and the economies thereby realized; (5) the distribution of their carload traffic in shipments, tons and ton miles, among rail, water and highway carriers, separately for goods received, fuel received and goods shipped during 1933; (6) their cost, aggregate and per ton for packing, crating, demurrage, etc., loading and unloading vehicles, drayage, and side or industrial track service; and (7) comparisons of typical movements of their freight in lots of 5 tons or more by highway and rail, showing the haul, average load, comparable costs for transportation, packing and drayage, and the comparable speeds available by the two agencies

Railway — The objectives of the rail carload inquiry were: (1) To compare existing rail prices with cost of providing the service and also with the cost to the shipper of providing his own transportation - a condition made possible by the recent development of highway, water and pipe line transport facilities; (2) to appraise carrier freight service in the light of the requirements of modern business and industry; and (3) to make available for use in budgeting, managerial control and supervision, operation, plant and service improvement, pricing, marketing and planning by both carrier managements and regulatory authorities, function, location and service unit costs and operative statistics.

Power — The objectives of the Motive Power study were: (1) The development of light-weight, high-speed motive power rail units, capable of hauling demountable body equipment for highway tractor, truck and trailer units; (2) development of a motive power unit capable of a maximum speed of 60 miles per hour, propelled by one or more steam or internal combustion engines, the construction features to be modern, using all practical improvements commercially available; (3) to discover types of Diesel engines applicable to railway service; (4) to discover types of power transmission - electrical, mechanical or hydraulic - that would be most efficient for high-speed, light-weight branch and main line local freight service

Vehicle — Any plan of coordinated freight transportation requires consideration of the physical means by which the cooperative effort will be accomplished. As long as each type of transportation agency is equipped to handle freight in equipment suitable only for its type of



transportation, it is useless to look forward to coordinated service. On the other hand while the physical movement of freight by and between rail, highway and water carriers may be accomplished in a number of ways, still the coordinating instrumentality must produce a speedier service at a lower cost than now obtains, or the public will not be interested. The purpose of the study was to review the various devices that are urged as a means of coordinating transportation service, and to ascertain the principles which if followed will produce the most efficient transportation effort between the several types of carriers.

Station — Because of the widely scattered area covered by the railroads of the United States, and the possibility that practices of value in use in one part of the country might not be adopted in other sections due to failure of the news to spread, a survey was undertaken to develop the methods in effect on all carriers covering certain designated features of freight station operation.

Waterway — The objectives of the survey were to ascertain the serviceability of water transportation, to measure the degree of utility obtained, to appraise the needs for water services, and to determine the relative sphere in which water transportation was best adapted as a part of a coordinated national transportation system under present and potential conditions.

Petroleum — The objectives of these several studies were diverse and reconciliations of the data were made wherever possible in order to appraise the place in transportation occupied by the transportation of petroleum and its products; to determine the volume and areas of production and consumption; the flow of the traffic; the profitability or unprofitability of the services of various types; the service demands of the traffic; the charges for the transportation service; and the relative utility of the several agencies engaged in the transportation of petroleum and its products.

Highway — The objective in this study was to discover the extent of highway transportation in the movement of quantity (carload or truck load) shipments of freight, the cost of such transport, the service rendered, the areas in which trucks operate most efficiently, the degree of coordination now practiced with reasons for the lack of coordination, and the development of methods and devices for effecting coordination between rail, highway and water carriers, which will best serve the interests of all transportation agencies as well as the public.

### 3. Typicality of Data

General

Base years were selected in each of the surveys, these being the latest statistical years for which information was available at the time the survey began. As a result, 1932 was the base year of the Rail Carload Traffic, Waterway Traffic, Petroleum Traffic surveys and of the Highway Operations, and the year 1933, of the Shipper survey.

With respect to the highway and shipper surveys, no data were available by which the typicality of the base year statistics could be gauged.

Shipper

The response to the shipper inquiry was highly gratifying. Over 10,000 replies were received, of which over 7,000 were able to furnish data in the detail requested. Names, addresses and businesses of the firms cooperating are listed in the Appendix. They include 5,503 manufacturers, producers, printers or publishers, 1,021 distributors, wholesalers or brokers, 227 retailers, 41 chain store operators or mail order houses, 73 warehouses, and 426 public utility companies or miscellaneous types of businesses. Replies were received from every section of the country and covered all principal freight commodities. Judging by the rail tonnage reported by the shippers whose replies were received and summarized, they were responsible for over 35 percent of the rail traffic which moved in 1933.* In some businesses, in the case of some commodities, this percentage of coverage represented one half or more of the total movement. On the other hand, in the case of boats and marine equipment, musical instruments and supplies the returns were not sufficient to constitute a fair sample of the business.#

The average railway haul shown by the returns was 320 miles outbound and 351 miles inbound.ø The average of all rail shipments shown by the carriers was 353 miles.ƒ The average load per car of all shipments reported by shippers was 29 tons outbound, 27 tons inbound, 48 tons for inbound fuel, and 30 tons for all traffic.** The average reported by carriers for all rail shipments was 34.5 tons,## for fuel 51 tons,øø and exclusive of fuel, 26 tons.ƒƒ

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* See Factual Summary, section 6, Shipper. # Analysis 7.2.
ø Analysis 7.4. ƒ Analysis 45.17.
** Analysis 38.1; total tons, rail, 232,000,000 divided by total shipments, rail 7,676,000 = 30 tons.
## Analysis 45.17. øø Analysis 45.18.
ƒƒ From exhibit 110 section 1, United States Aggregate, tons handled divided by cars handled.



Railway

At the time the inquiry was promulgated, the latest full year for which rail operating revenues, expenses and statistics were available was 1932, and it therefore was chosen as the base year for the study. With few exceptions, to be noted hereinafter, the railways were asked to distribute traffic and expense statistics upon the basis of data and statistics of actual operations of the base year to the fullest possible extent, and where this could not be done, upon the basis of selected test periods.

The typicality of the base year was tested by relating the income, revenues, expenditures, traffic and service units of all years from 1922 to 1933 to those of the year 1932, and by expressing such relation as an index or percentage of the latter year.

The indices with respect to the extent of operations are shown in detail in analysis 3.1. Among the more important facts shown are (1) that train and car mileage in 1932 had not been reduced in the same degree that traffic had decreased; (2) that the ratio of empty to loaded haul and of gross to net ton miles was abnormally high in 1932; (3) that revenue traffic density in 1932 was about 60 percent below normal and rail service units about 40 percent below normal; (4) that train mile density in 1932 was about normal and car mile density about 8 percent below normal; and (5) that efficiency measured by the transportation of gross and net ton miles per train hour was higher in 1932 than in pre-depression years and lower than in 1931 and 1933.

Considering first freight revenue, we find that in 1932 it amounted to about 2,443 million dollars. This was lower than any year since 1920. Using it as a base (100) to which revenues of other years are related as indices, we find that the average annual freight revenue of the 12-year period was 166 percent of 1932, and that the year 1929 was about 97 percent greater than 1932.*

Turning to the traffic units which were responsible for these revenues, it appears that, related to the 236 billion net ton miles carried in 1932 as a base, the average annual ton mileage of the 12-year period was 160 percent; of 1930, 164 percent; 1929, 191 percent; and 1933, 107 percent.# Examining this ton mileage by commodity groups, we find that compared with 1932, the average annual ton mileage of the 12-year period of Rough Material was 285 percent (1934, 128 percent); of Raw Material, 157 percent (1934, 118 percent); of Semiprocessed Material, 210 percent (1934, 135 percent);

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* Analysis 3.2. # Analysis 3.1.

of Necessaries, 121 percent (1934, 114 percent); of Auxiliaries, 136 percent (1934, 109 percent); and of Accessories, 275 percent (1934, 190 percent).* Upon the whole, therefore, it appears that the volume of traffic handled in 1932 was between 60 and 80 percent of a normal traffic, as nearly as that condition can be appraised.

The cost of handling traffic in 1932 was almost exactly 2 billion dollars. The index of the average 12-year period was 166.# This means that because the carrier managements reduced their costs in exactly the same degree as their traffic fell - a remarkable achievement - the ton-mile unit cost in 1932 was exactly the same as it was in the 12-year period, and that insofar as the total unit cost is concerned, 1932 statistics are equivalent to those of a normal period. This is not true, however, if individual functions be considered. Thus, using the unit cost per equated ton mile of 1932 as a base, we find the average cost (over the 12-year period) of roadway maintenance to be 131 percent; of station maintenance, 146 percent; power maintenance, 120 percent; car maintenance, 107 percent; station agency, 103 percent; yard transportation, 107 percent; road transportation, 117 percent; traffic expense, 68 percent; general expenses, 74 percent; and taxes, 82 percent.ø

In the exigencies of the depression, carrier managements developed many improved methods of operation, the benefits of which will prove permanent. On the other hand, there is little doubt that some part of the reductions in costs, indicated by the foregoing indices, were made possible only by deferment of expenditures which in time must be made. The integrated effect of increased traffic, increased wages and materials, and the making good of deferred maintenance cannot be appraised at this time, and it follows that the same is true of the deflection of the reported unit costs from normal unit costs. The most that can be said is that, on the whole, the average unit cost of all functions in 1932 did not differ substantially from the average of the 12-year period.

Station — Request for information as to station practices was addressed to all Class I railroads and 114 responses were received covering 147 carriers. In large part satisfactory information was furnished, the principal carriers generally submitting detailed reports covering every feature of station operation. The basic information, therefore, appears to be representative and reasonable.

* Analysis 3.8. # Analysis 3.2.
ø Analyses 3.4, 3.5, 3.6.



Waterway — The floating equipment and physical property of water carriers were reported as of June 30, 1933, including the number of both self-propelled and non-propelled vessels owned, the number in operation, the number laid up, their average age, their average expected remaining life; their gross, net and dead weight tonnage and type; their original cost and current book value; and the book value of all other property owned or leased. Routes and services regularly operated as of June 30, 1933, and irregular or occasional services operated during the year 1932 and the first half of 1933, were reported. Tonnage carried and highest and lowest revenues per ton were reported for the five years 1928 through 1932. Detailed tonnage statistics by commodities and routes were reported for the year 1932. Comparative balance sheets, income statements and annual reports were submitted for the years 1928 through 1932. Revenue and detailed operating expense figures for 1932 were reported. While 1932 tonnage showed substantial decreases, as compared with the preceding four years, sufficient data were obtained in the way of capacity utilized, revenues, unit costs and other pertinent factors to use the 1932 figures and results obtained as basic.

The annual reports of the Chief of Engineers, United States Army, contain tonnage statistics of domestic water-borne traffic. These reports indicate a decline in total tons from 1928 to 1932 of 34 percent.* The reports of respondents showed a decrease in total tons handled by reporting companies from 1928 to 1932 of 52 percent.# The Army reports, included in both of the years, mentioned a very substantial tonnage of petroleum and petroleum products, amounting to 18 percent in 1928 and 30 percent in 1932 of total tonnage. This traffic is handled largely in privately owned vessels. Very few reports were received covering this particular traffic. In 1932, petroleum and its products accounted for only 1 percent of the tonnage handled by reporting companies.ø Eliminating from the Army reports crude petroleum and Auxiliaries which included petroleum products, the remaining tonnage shown on these Army reports indicated a decrease for 1932 as compared with 1928 of 51 percent.*

Petroleum — The survey was not limited to any particular year but data with respect to the movement of traffic were obtained for the same base year as that used in the Freight Traffic Report - 1932. Differences between conditions prevailing in that year, however, and those which prevailed in prior and succeeding years are pointed out and discussed whenever deemed of sufficient importance to materially affect the conclusions reached.

* Analysis 7.7.
# See section 7, Factual Summary Waterway.
ø Exhibit 803.

## II PROFITABILITY OF FREIGHT SERVICE

### 4. Freight Service Income

Waterway

The gross revenues of reporting companies for the year 1932 amounted to $148,700,000. The expenditures of these companies for the year 1932 amounted to $159,200,000 resulting in an operating loss of $10,500,000. In 1930 gross receipts were $209,900,000 and expenditures were $208,000,000 which yielded an operating profit of $1,900,000 or .9 percent. In 1928, gross revenues were $197,700,000, expenditures were $182,200,000, and in that year an operating profit of $15,500,000 or 8 percent was realized.*

The freight revenues, in 1932, of the companies who reported detailed statistics were $119,600,000. The total cost of their freight operations for 1932 were $131,500,000 resulting in a loss on freight service of $11,900,000.# Operating expenses for joint freight and passenger services were not segregated in detail in the reports as between these two services. Such expenditures were prorated on a revenue basis.

Petroleum

The financial results of the operation of the carriers engaged exclusively in the transportation of petroleum - the petroleum pipe lines - are generally quite favorable, although 8 companies reported deficits in operating income in 1932. As of December 31, 1932, the total investment of the 46 principal pipe line companies reporting to the Interstate Commerce Commission aggregated approximately 764 million dollars,ø of which 636 million dollars was invested in trunk pipe lines and 128 million dollars in gathering pipe lines.

These companies earned approximately 212 million dollars in total pipe line revenueø about 154 million dollars in trunk line revenue and 57 million dollars in gathering line income; and expended approximately 102 million dollars,/ producing a ratio of operating expenses including taxes to operating income of approximately 48 percent.

The operating income of the petroleum pipe line companies, including the deficits of eight companies, aggregated approximately 110 million dollars in 1932.** This is equivalent to a return of over 14 percent on the total investment of approximately 764 million dollars, and a return of approximately 26

* Report of Federal Coordinator of Transportation, 73d Congress, 2d Session, Senate Document 152, Appendix A.
\# Analysis 4.1. ø Analysis 1.8.
/ Analysis 3.9. ** Analysis 4.1.



percent upon the net investment of approximately 428 million dollars, which excludes accrued depreciation of 336 million dollars.*

No data are available to show the profitability of petroleum traffic to waterway carriers and since the overwhelming majority of this traffic is transported by petroleum companies which own and operate their own fleets and vessels either directly or through subsidiary companies, comparable data, if available, would be useless for comparative purposes.

The crude petroleum traffic originated by Class I railroads in 1932 amounted to 2,803,204 tons# or approximately .44 percent of the total originated traffic of Class I railroads which amounted to 646 million tons.ø If the petroleum products are included, the petroleum and products traffic of the Class I railroads amounts to approximately 7.7 percent of the total traffic originated.# The crude petroleum traffic in 1932 produced 8 1/2 million dollars or approximately .34 percent of the total freight revenue of Class I railroads which aggregated 2 1/2 billion dollars; and the combined crude and refined petroleum traffic produced 9.6 percent of the total freight revenue of Class I carriers./ Crude petroleum traffic with an average haul of approximately 403 miles in 1932 exceeded in distance the average haul of all railroad freight traffic - 353 miles.**

Crude petroleum traffic in 1932 was moved by pipe line an average distance of 382 miles, while refined petroleum oils were transported an average distance of 400 miles.##

### 5. Causes of Unprofitability

Waterway

It was clearly indicated that internal competition within the industry was largely responsible for the unsatisfactory financial results obtained. The total tonnage of reporting carriers in 1930 was about 6 percent less than in 1928. The gross receipts, however, were about 6 percent higher in 1930 than in 1928øø This was due to increases on certain long-haul routes, particularly intercoastal, and large decreases in tonnage on shorter haul routes, particularly the Mississippi River system and the Great Lakes.

* Analysis 70.8. # Analysis 7.6. ø Analysis 3.1.
/ I.C.C. Commodity Statistics, 1932.
** Analyses 45.17 and 45.18.
## Analysis 70.1 (ton miles divided by tons).
øø Report of Federal Coordinator of Transportation, 73d Congress, 2d Session, Senate Document 152, Appendix A, page 150 and 152.

In 1932, large decreases in both tonnage and receipts were reported. Practically all routes were overtonnaged even in 1928, and, in most cases, the average revenue per ton has undergone a noticeable decline during the period reviewed. Rate cutting within and without the industry has been prevalent. The tonnage handled in 1932 utilized only 38 percent of the vessel capacity of the reporting companies.*

## III FREIGHT VOLUME

### 6. Aggregate Volume of Freight Traffic

General

There was not found available a statement showing the aggregate production and imports for 1932 or in previous years, in terms of a common unit of measure. Reference to the statistical abstract published by the Department of Commerce, however, made it possible to compile a statement of the tonnage by principal commodities for the years 1928 and 1932, using average or conventional conversion factors where such products or imports were stated in units other than tons. Products and imports, for brevity, are hereinafter called "products."#

Articles which move in freight transportation were grouped into six general commodity groups in accordance with the degree of processing to which they had been subjected: (1) The lowest grade of products, "Rough Material"; (2) materials of greater intrinsic value but wholly unprocessed, "Raw Material"; (3) "Semiprocessed Material"; (4) processed materials which are indispensable to human existence, "Necessaries"; (5) simple processed materials which are used as ingredients of complex processed materials, "Auxiliaries"; and (6) complex processed materials, for ultimate consumption, desirable but not indispensable, "Accessories."

American products in 1932 aggregated about 1,570 million tons, which was 67 percent of 2,330 million tons produced in 1928. A comparison of total tonnage of the six general commodity groups indicates a surprising consistency. The percentages of the total products for Rough Material (15 percent), Raw Material (61 percent), Semiprocessed Material (5 percent) and Auxiliaries (10 percent) were exactly the same in 1932 as they were in 1928. Necessaries were 5 percent in 1928 and 7 percent in 1932; and Accessories were 4 percent in 1928 and 2 percent in 1932.ø

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* Exhibit 805.
\# Analysis 6.1 and Appendix.
ø Analysis 6.1.



These relative volumes of the several groups closely resemble those of the same groups in the rail traffic of 1932, in which Rough Material was 10 percent; Raw Material 63 percent; Semiprocessed Material 4 percent; Necessaries 5 percent; Auxiliaries 15 percent; and Accessories 3 percent.*

The reported tonnage summarized in the surveys, aggregating 759 million tons, is not the total carrier tonnage. To the rail tonnage of 631 million tons so summarized there must be added the l.c.l. tons of 16 millions, 33 million tons originated by Class II and Class III carriers and 11 million tons by electric railways, bringing the total rail tonnage to 691 million.# The pipe line tonnage reported of 83 million omits intrastate tonnage, which is estimated to have amounted to about 27 million tons in 1932. The tons reported by water carriers aggregated but 45 million tons,ø whereas the domestic tonnage shown in the Annual Report of the Chief Engineers of the United States Army was 272 million tons.ƒ

The total rail, water and pipe tonnage in 1932 was, therefore, about 1,070 million tons. The difference between this amount and the total products of that year (1,570 million tons) was 500 million tons which, if it was transported at all, moved by highway.

This volume of tonnage unaccounted for was greater, both absolutely and relatively, than that which existed in 1928. The total products of the latter year aggregated 2,330 million tons. Since the carrier tonnage in that year amounted to 1,910 million tons**, the remainder of 420 million tons which did not move by rail, water or pipe line, either moved by highway or, which is more likely, was consumed locally. In 1932, however, with a decline of a third in the volume of products, this traffic which did not move by the carriers mentioned, had grown to 500 million tons - nearly a third of the total. Two assumptions are possible which roughly measure the maximum and minimum amount of this traffic which moved by highway. The first assumption is that local consumption declined at the same rate as general consumption in which case it was 280 million tons in 1932; the other is that it did not decline at all but remained constant at 420 million tons.

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* Analysis 45.17 et seq.
\# I.C.C. Statistics.
ø Analysis 7.1.
ƒ Probably not more than 214 million tons was intercity traffic. See section 7, Factual Summary, Waterway.
** Steam railways 1,371 million tons and electric railways 22 million tons (from I.C.C. Statistics); water 412 million tons (analysis 7.7); pipe, including intrastate movement, 105 million tons, (analysis 7.6 plus 27 million tons estimated intrastate movement).

The first assumption produces highway tonnage in 1932 of 220 million tons; the second the minimum, 80 million tons. In the first case the older carriers have lost to highway about 17 percent of the traffic formerly handled by them; in the latter case about 7 percent. The true loss probably lies nearer the former than the latter.

In the United States there was a great growth of population until 1900. The excess of births over deaths was large. Immigration from Europe 1870 to 1910 was large. The growth of population from 1900 to 1922 was much slower and there was less excess of births over deaths. There was practically no immigration from 1914 to 1919, not much immigration from 1922 to 1930 and none since 1930.

Students of population growth do not expect much increase in excess of births over deaths or much growth in the number of immigrants in the United States during the next 25 years. Most students of population believe that the population in the United States will be practically stationary after 1960.

From 1835 to 1895 there was always expansion westward. Now there is little expectation of migration westward during the next 20 or 30 years. For a long time the railroads were the only carriers in the United States, except in certain spots where water was available. For the last 15 years highway transportation has been growing very rapidly. By 1929 highway transportation had an investment (including highway and vehicles) equal to that in the railroads. There was great growth in railroad and highway facilities from 1920 to 1930, at a time when the growth of population was very materially slowing down. The result is an excess of transportation facilities. The foreign markets for United States products are now relatively small and it is probable that these markets will continue to be small for a number of years to come.

Shipper — To reduce to a minimum the amount of work entailed in answering the inquiry and at the same time to approximate the commodity distribution, the shippers were asked to classify their business in accordance with 40 business classifications. Within reasonable limits it has been possible to reconcile this business classification with the several statistical commodity classifications, with respect to the outbound shipments. Whenever a commodity (except inbound) is mentioned in connection with the shipper, what is meant is a business group in which that commodity is the principal thing sold.

The inbound and outbound traffic generally is shown separately. The ratio of outbound rail tonnage reported by shippers to total rail tonnage originated is 20 3/4 percent.*

* Analyses 7.2 and 45.17.



Deducting this percentage from the inbound tonnage as representing duplication and adding the remainder to the outbound tonnage reported indicates unduplicated tonnage of over 211 thousand tons. This is nearly 35 percent of the total rail carlot tonnage of 1932. A similar calculation with respect to water tonnage indicates unduplicated tonnage reported of 37 million tons or 18 percent of the total water-borne intercity traffic reported by the Chief of Engineers, United States Army.

The total volume of outbound tonnage reported was 161 million tons, inbound 129 million tons, making a grand total tonnage reported of 290 million tons. Of this total, 12 million tons were reported by businesses dealing in Rough Material, 67 million tons by those dealing in Raw Material (of which 45 million were coal and coke), 13 million tons by those dealing in Semiprocessed Material (principally paper), 51 million tons by those dealing in Necessaries (of which 18 million tons were by cereal businesses), 98 million tons by those dealing in Auxiliaries traffic, and 49 million tons by those dealing in Accessories traffic.*

Petroleum — Prior to 1875 the annual production of crude petroleum in the United States was approximately 5 million barrels of 42 U. S. standard gallons per year. In 1876 the annual production was less than 9 million barrels but rose to over 54 million barrels in 1891, and to over 100 million barrels per year in 1903. Between 1903 and 1916 the annual production rose steadily, year by year, until it reached in excess of 300 million barrels in the latter year. The incentives to production due to the World War, the rapid increase in the number of automobiles and motor trucks, the increased use of petroleum for vessel fuel and in industry and the use of petroleum for the heating of buildings caused the production of petroleum to increase from approximately 300 million barrels in 1916, to the peak of production of slightly over a billion barrels in 1929. Since 1929 the decreased demand for petroleum, due to business stagnation and the attempts to regulate and control the production of petroleum by State and Federal authorities, has resulted in decreased annual production to 785 million barrels in 1932.#

The present production is estimated by geologists to be approximately 46 percent of the potential capacity of the wells in production, if operated to full capacity.

* Analysis 7.2.

\# Source: Bureau of Mines, Department of the Interior, U. S. Government.

The possibility of the exhaustion of petroleum resources is one that should not be ignored. From time to time geologists have made estimates of the total petroleum reserve of the United States which have been proven to be inaccurate prophecies, due to the discovery and development of new fields and to the improvements in technique, in location, drilling, and recovery, and in improved methods of conservation and controlling production.

It has been estimated that 43 percent of the area in the United States is barren of petroleum resources and of the remaining 57 percent of the area only a small percentage is considered as promising petroleum production territory. The petroleum producing areas are scattered over wide expanses of territory causing uncertainty with respect to the location of the possibility of new areas of production and as to the extent and location of the transportation facilities needed to handle the traffic.

## 7. Distribution of Traffic Among Carriers

General

The conclusion stated in The Report with respect to the distribution of traffic among carriers is confirmed by the returns to the shipper questionnaire which, with respect to the total tons of carload freight, was shown in section 6 supra to indicate a rail sample of nearly 35 percent and a water sample of nearly 18 percent.

The average rail haul per ton originated in the United States as a whole in 1932 was 353 miles.* The shippers indicated an average haul by water of about 1,000# miles and by highway of 100 miles.ø The water survey indicated that water routes averaged about 25 percent longer than were necessary to provide the same service by rail, which would reduce the average haul to the equivalent of 750 rail miles. The average pipe line haul was 380 miles.ƒ Weighting the percentage of the tons originated, as shown in section 7 of The Report, for these differences in haul, the rail proportion becomes 48 percent, the water 40 percent, pipe line 8 percent, and the highway 4 percent, respectively, of the total ton miles.

* Analysis 45.17.
\# Waterway survey indicated 1,100 miles. The reduction to rail mileage is for the purpose of obtaining a common basis for comparison.
ø Analysis 7.4.
ƒ Analysis 70.1.



From the foregoing it would appear that, from a tonnage standpoint, carriers other than highway operators have lost approximately 15 percent of the traffic which they formerly handled. From a revenue standpoint, this loss appears to be between 15 and 20 percent.* Assuming that the production of 1928 is one which may be normally expected over the period of the immediate future, the railways can receive revenues only about 85 percent as great as those which were received in 1928.# This would mean about the same revenues as were received either in 1930 or in the average of the 12-year period.ø The foregoing conclusion rests upon the assumption that the present relative attractiveness of the four types of freight transportation, rail, water, pipe line and highway, will not be changed materially, either from a service or a price standpoint.

In the case of the railways 85 percent of the 1928 freight revenues amounts to about 4 billion dollars - the revenues over the average 12-year period and in 1930. These revenues over the 12-year period and in 1930 produced a net return of 900 and 1,000 million dollars, respectively,ø or about equal to a 5 percent return upon the freight investment of approximately 18 billion dollars. The foregoing does not take into consideration the passenger investment of about 7 billion dollars or the passenger operating deficit which in 1933 amounted to 200 million dollars.ƒ

Shipper

Of the outbound tonnage reported by shippers 82 percent moved by rail, 6 percent by highway and 12 percent by water.** Of the outbound ton miles, 69 percent moved by rail, 2 percent by highway, and 29 percent by water.## Of the inbound tonnage, other than fuel, 77 percent moved by rail, 6 percent by highway, and 17 percent by water. Of the inbound ton miles, 58 percent moved by rail, 2 percent by highway, and 40 percent by water. Of the inbound fuel tonnage, 78 percent moved by rail, 3 percent by highway, and 19 percent by water; and of the ton miles, 76 percent moved by rail, 1 percent by highway, and 23 percent by water. Outbound commodities of which the tonnage moving

* The loss in revenue follows closely the loss in tonnage rather than ton miles, due to the large volume of higher rated commodities carried and the short average haul for highway movements.
\# This estimate, if anything, is too optimistic. It does not evaluate sufficiently the effect which the substitution of fuels or power not requiring transportation, or the growing tendency of industry to relocate, to reduce or eliminate transportation.
ø Analysis 3.2.
ƒ Passenger Traffic Report, Federal Coordinator of Transportation.
** Analysis 7.2.
\## Analysis 7.3.

by highway was 15 percent or greater were: Paints, 44 percent; beverages and liquors, 42 percent; automobiles and parts, 39 percent; groceries, 37 percent; rubber articles and tires, 33 percent; live stock, 32 percent; dry goods and clothing, 24 percent; bakery goods, 20 percent; canned goods, leather goods, fresh fruits and vegetables, each 18 percent; books, stationery and paper, each 17 percent; cotton in bales, 16 percent; and textiles, 15 percent. Inbound those 15 percent or greater were: Live stock, 62 percent; canned goods, 38 percent; boots and shoes, 31 percent; cooperage material, 27 percent; cotton in bales, 25 percent; fresh fruits and vegetables, and vegetable oil, meal and cake, each 22 percent; bakery goods, 19 percent; automobile parts, 18 percent; sand, stone and gravel, and groceries, each 17 percent; rough lumber, 15 percent.* There were only five businesses in which the outbound highway ton miles exceeded 10 percent: Rubber articles and groceries, each 19 percent; paints, 16 percent; beverages and liquors, 13 percent; automobiles and parts, 12 percent; and only two cases where the inbound highway ton miles exceeded 10 percent: Livestock, 19 percent; and cotton in bales, 12 percent.#

The rail average haul of inbound commodities was 351 miles, outbound 320 miles; water inbound 1,026 miles, outbound 999 miles; highway inbound, 116 miles, outbound 99 miles. The commodity having the longest average highway haul was fresh fruits and vegetables, 435 miles. Other outbound hauls in excess of 200 miles were packing house products, groceries, structural iron and steel, rubber articles, plumbing and heating materials, books and periodicals, department store materials, tobacco. Inbound hauls averaging more than 200 miles were reported for the following groups: Rough lumber, fuel, beverages, groceries, rubber.ø

The foregoing rail and highway traffic consists of carloads. As shown in the Coordinator's Merchandise Traffic Report, shippers reported l.c.l. data which indicated a movement of 40 million tons of merchandise by highway. Using the average haul of all carload highway traffic (100 miles) produces 4 billion additional highway l.c.l. ton miles.

Railway

Rail freight tonnage of carload traffic in 1932 aggregated 631 million tons. The tonnage index of the average 12-year period was 172 compared with its ton-mile index of 160.ƒ The difference is due to the different distribution of commodities, rather than to a

* Analysis 7.2.
\# Analysis 7.3.
ø Analysis 7.4.
ƒ Analyses 3.7 and 3.8.



lengthening haul, since it was found that applying the average haul of individual commodities in 1932 to the tonnage of each commodity in each of the preceding twelve years, produced substantially the average haul of all commodities reported by the carriers for that year, indicating that the average haul of the individual commodities in 1932 was the same as that of its preceding years.

In the average year, Rough Material constituted 15 percent of the total tons, in 1932, 10 percent; Raw Material constituted 60 percent in the average year and 63 percent in 1932; Semiprocessed Material, 5 percent in the average year and 4 percent in 1932; Necessaries, 4 percent in the average year and 5 percent in 1932; Auxiliaries, 12 percent in the average year and 15 percent in 1932; and Accessories, 4 percent in the average year and 3 percent in 1932.*

Rough Material constituted 5 percent of the aggregate ton miles in the average year and 2 percent in 1932; Raw Material, 63 percent in the average year and 64 percent in 1932; Semiprocessed Material, 5 percent in the average year and 4 percent in 1932; Necessaries, 8 percent in the average year and 11 percent in 1932; Auxiliaries, 13 percent in the average year and 16 percent in 1932; and Accessories, 6 percent in the average year and 3 percent in 1932.*

Waterway

The domestic waterline freight traffic of reporting companies in 1932 amounted to 48 million tons. This was slightly less than one half of the tonnage handled by these carriers in 1928, in which year they handled 98 million tons. In 1929, the volume had increased to 106 million tons; in 1930, it declined to 93 million tons; and in 1931, it had decreased further to 70 million tons. The depression, of course, adversely affected the available volume of traffic. Of the 50 million tons decrease in 1932, as compared to 1928, 44 million tons were represented by falling off in business in the Great Lakes district where the principal commodities handled by water are coal, grain, ore, sand, stone and gravel.#

The annual reports of the Chief of Engineers, United States Army, for the year 1932 shows a total of 272 million tons of domestic water-borne traffic.ø The total tonnage of reporting companies for the year 1932 amounted to 48 million tons. Ton miles were reported by the Chief of Engineers, United States Army, for freight carried on the inland rivers and lakes of the United States but not for coastwise or intercoastal traffic. Treating only districts for which comparable

* Analyses 3.7 and 3.8.
\# Report of Federal Coordinator of Transportation, 73rd Congress, 2nd Session, Senate Document 152, Appendix A, Table II.
ø Analysis 7.7.

figures were available, the Army reports indicated a ton-mile movement on the Mississippi River and Great Lakes systems of 30 billion ton miles, while reporting carriers operating in these districts performed a service of 18 billion ton miles.* The Army tonnage figures are approximately 5 1/2 times those of reporting companies, but the Army ton-mile figures are only 1 2/3 times the ton-mile figures of reporting companies. It is evident that the Army figures include a very large proportion of short-haul traffic frequently between separate municipalities located on extensive harbor waters, such as New York Harbor district, San Francisco Bay, and Puget Sound. The amount of such tonnage which could be definitely earmarked from the Army report was 58 million tons. There was also included in the report of the Chief of Engineers an item of 8 1/2 million tons of floated and rafted timber. This leaves 214 million tons of intercity water-borne traffic as reported by the Chief of Engineers, United States Army.

The Army report included 82 million tons of petroleum and petroleum products. Respondents reported only 497 thousand tons of these commodities. Coal and coke were shown in the Army report as 73 million tons; and sand, stone and gravel as 33 million tons, while the tonnage of reporting companies for these commodities was 18 million and 3 million tons respectively.# Making allowance for the known local or intraport traffic, the floated tonnage, and making adjustments for the discrepancies between tons reported by respondents and the annual report of the Chief of Engineers, United States Army, for the above mentioned commodities only, the revised figure for the Army report becomes 78 million tons as against 48 million tons for reporting companies, verifying within a close degree of accuracy the 1 2/3 ratio indicated by the ton-mile statistics. The tonnage reported and used in the survey constituted at least 60 percent of the 1932 intercity water-borne traffic; excluding petroleum; coal and coke; and sand, stone and gravel.

The nature of the commodities which seek waterway transportation and the flows of traffic available have developed distinct types of waterway freight transportation services. Common carrier operators generally service definite routes on fairly well established schedules. Large movements, particularly of bulk commodities, are ordinarily handled in cargo lots by contract carriers. Large producers, in some instances, either operate their own vessels or have established subsidiary companies to transport their own tonnage. Such operations are commonly classified as private carriers. There is no absolute line of demarcation, however, between these three different classes of operators. Private carriers frequently act as contract carriers and often as common

* Analysis 49.4.
\# Analysis 7.7 and exhibit 803.



carriers. Contract carriers sometimes operate as common carriers in one direction or over part of their routes, and common carriers in some cases handle tonnage on a contract basis. In most instances, the reporting carriers could be definitely allocated to one of these three classes of service in which the great preponderance of their operations occurred. In 1932, reporting common carriers handled 19 million tons, contract carriers 20 million tons, and private operators 8 million tons.* These figures for reporting companies do not truly reflect the actual tonnage distribution between classes of carriers. As stated before responses were received from almost all important common carriers, but contract and private carriers did not reply in anywhere near the same proportion. It was clearly indicated that common carriers as a class handled not more than 10 percent of the total water-borne traffic.

The common carriers were obligated generally to maintain regular and dependable schedules and in 1932 utilized only 28 percent of their vessel capacity. The contract carriers, with a slackening in tonnage offered, could more easily adjust their movements and operated in 1932 at 73 percent of capacity. The producers, who had acquired vessels primarily to move their own products, could not so readily afford to lay up their own vessels and purchase transportation in the open market. They did not in all cases observe the same degree of regularity of schedules as the common carriers, and the result was that the operation of these private carriers was at 35 percent capacity.#

Petroleum

In 1932 of a total estimated movement of 711,000,000 barrels of crude petroleum, approximately 71.5 percent was transported by pipe lines; about 26 percent was moved by coastwise, intercoastal and inland waterway carriers; and about 2.5 percent was hauled by Class I railroads. The remainder of the crude petroleum production was distributed among intrastate pipe lines, Class II and III carriers and motor trucks.ø

The total petroleum products transported in the United States in 1932 amounted to approximately 744,000,000 barrels. Of this amount the water carriers originated 382,000,000 barrels or 51 percent of the total traffic; the Class I railways originated approximately 337,000,000 barrels or 45 percent of the total, and the interstate pipe lines originated about 24,900,000 barrels or 3.3 percent. The remainder of the refined petroleum produced was moved by intrastate petroleum pipe lines, Class II or III railway carriers, or by motor trucks./

* Analysis 70.1. # Exhibit 805.
ø Analysis 7.6 (6.435 barrels crude petroleum = 1 ton).
/ Analysis 7.6 (7.215 barrels gasoline = 1 ton).

## IV FREIGHT TRAFFIC MARKETS

### 8. Territorial Freight Traffic Markets

Railway

Out of a total of 631 million tons originated in 1932, New England Carriers originated 2 percent and terminated 5 percent of rail carload freight traffic; Central East Carriers originated 42 percent and terminated 47 percent; Pocahontas Carriers originated 12 percent and terminated 6 percent; Southeast Carriers originated 13 percent and terminated 11 percent; Northwest Carriers originated 14 percent and terminated 16 percent; and Southwest Carriers originated 17 percent and terminated 15 percent.*

Carriers in the Eastern District originated 25 percent of the Rough Material, 52 percent of the coal, 25 percent of other Raw Material, 52 percent of Semiprocessed Material, 34 percent of Necessaries, 52 percent of Auxiliaries, and 81 percent of Accessories. They terminated 27 percent of Rough Materials, 65 percent of coal, 36 percent of other Raw Material, 55 percent of Semiprocessed Material, 49 percent of Necessaries, 51 percent of Auxiliaries, and 72 percent of Accessories.*

Southern District Carriers originated 20 percent of Rough Material, 37 percent of coal, 15 percent of other Raw Material, 15 percent of Semiprocessed Material, 11 percent of Necessaries, 12 percent of Auxiliaries, and 7 percent of Accessories. They terminated 18 percent of Rough Material, 20 percent of coal, 15 percent of other Raw Material, 15 percent of Semiprocessed Material, 14 percent of Necessaries, 13 percent of Auxiliaries and 7 percent of Accessories.*

Western Carriers originated 54 percent of Rough Material, 11 percent of coal, 56 percent of other Raw Material, 33 percent of Semiprocessed Material, 55 percent of Necessaries, 36 percent of Auxiliaries, and 12 percent of Accessories. They terminated 55 percent of Rough Material, 15 percent of coal, 49 percent of Raw Material, 30 percent of Semiprocessed Material, 37 percent of Necessaries, 36 percent of Auxiliaries and 20 percent of Accessories.*

Waterway

The United States being bounded on the east by the Atlantic Ocean, on the west by the Pacific Ocean, and having as a part of its northerly border the Great Lakes and on the easterly half of its southern border the Gulf of Mexico, is well supplied with natural, deep-water trade routes. Navigable rivers such as the Hudson, Delaware and Columbia have been supplemented by canals such

* Analysis 8.2.



as the Panama, New York State Barge and Welland, and improved waterway projects, particularly on the Mississippi, Ohio, Illinois and Warrior Rivers, have produced an extensive system of inland waterway routes. Most of the large cities are located on and a large part of the population resides along or closely adjacent to existing waterway routes. For the purpose of analysis, waterline operations have been grouped according to the geographic districts within or between which they were conducted. These major groups are Atlantic Coastwise and Inland, Atlantic Gulf, Intercoastal, Inland Waterways-Mississippi System, Great Lakes System, and Pacific Coast and Inland. All operators who reported were assigned to one of these groups, and in cases where a carrier operated in more than one of these districts, its activities were prorated to the respective districts in accordance with the details shown in his return. In 1932, of the reported tonnage, 25 million tons were handled in the Great Lakes district, 7 million tons on the Inland Waterways-Mississippi System, 5 million tons Atlantic Coastwise and Inland, 4 million tons Intercoastal, 3 million tons Pacific Coastwise and Inland, and 3 million tons in the Atlantic Gulf Service.*

Petroleum

The principal petroleum producing regions of the United States are: (1) the Midcontinent district, including portions of the States of Texas, Oklahoma, Kansas, Louisiana, Arkansas, New Mexico and Missouri; (2) the California district, including producing wells in the State of California; (3) the Gulf Coast district, including portions of Texas and Louisiana adjacent to the Gulf of Mexico; (4) the Appalachian district, including the western portion of the States of New York, Pennsylvania, West Virginia, eastern portions of Ohio, Northern Kentucky and Tennessee; (5) the Rocky Mountain district, including Wyoming, Montana, Colorado, Utah, Northern New Mexico and Alaska; (6) the Lima-Indiana district, including western Ohio, Indiana and Michigan; (7) the Illinois-Indiana district, including parts of southwestern Indiana and southeastern Illinois.

The production of crude petroleum in 1932 was distributed among these major producing areas as follows: Midcontinent district, 493,034,000 barrels or 63 percent; California district, 178,128,000 barrels, or 22 percent; Gulf Coast district, 53,466 barrels, or 7 percent; Appalachian district 29,667,000 barrels, or 4 percent; Rocky Mountain district, 17,410,000 barrels, or 2 percent; Lima-Indiana district 8,004,000 barrels, or 1 percent; and Illinois-Indiana district, 5,450,000 barrels, or nearly 1 percent.#

* Report of Federal Coordinator of Transportation, 73d Congress, 2d Session, Senate Document 152, Appendix A, Table II.

\# Analysis 8.3 - Source, Bureau of Mines, U. S. Department of Commerce.

Three States produced 82 percent of the total crude petroleum production of 1932 - Texas 40 percent, California 23 percent and Oklahoma 19 percent. Six States produced 12 percent of the total production - Kansas, including Missouri, produced 4.4 percent, Louisiana 2.8 percent, Wyoming 1.7 percent, Pennsylvania 1.6 percent, and Arkansas 1.5 percent.*

## 9. Freight Traffic Terminal District Markets

Railway

For the purpose of localizing in some degree carrier traffic (and costs), all carrier stations were grouped into terminal districts. These districts were of three classes. Metropolitan terminal districts# were individual terminal areas. They consisted of the 86 largest cities in the country (each with more than 100 thousand inhabitants) together with the entire area, rural and urban, including in some cases other cities, embraced within the railway terminal operating areas within which the city was located.

A major terminal area is defined as a common switching area (other than a metropolitan area) where one or more switch crews were employed by a respondent carrier during the greater part of the year 1932. All such areas in each of the nine rate territories were grouped into a single "major terminal district" for that territory.

A minor terminal area is defined as a station at which the respondent carrier collected or delivered freight during 1932, chiefly without the employment of switch engines, and hence by means of way freight train service. All such stations in each of the nine rate territories were grouped into a single "minor terminal district" for that territory. Since classification between major and minor districts depended on the use of switch engines and not the station, there are cases where a station is in a major group on one railway and in a minor group on another. Eliminating duplication as far as possible, there were in the United States in 1932, 86 metropolitan terminal districts, 1,431 major terminal areas and 32,704 minor stations.

Of all carload traffic in 1932, approximately 22 percent originated and 46 percent terminated in the 86 metropolitan terminals; 27 percent originated and 26 percent terminated in the 1,431 major terminals where switch engines were employed; and 51 percent originated and 28 percent terminated at the minor stations.ϕ

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* Analysis 8.3.

\# These metropolitan terminal districts are listed by name in analyses 9.4 to 9.7, inclusive.

ϕ Computed from analyses 9.1, 105.4 and 105.5.



These general percentages, insofar as cars terminated are concerned (data not available for cars originated), were consistent throughout the commodity groups with the following principal exceptions: Metropolitan areas consumed 46 percent of total cars; but 76 percent of perishables; 63 percent of paper and its products; 75 percent of edible animal products; only 29 percent of petroleum products; 33 percent of building material; but 64 percent of appliances, machinery, automobiles, etc. Major terminal districts consumed 26 percent of the total; but only 16 percent of perishables; 19 percent each of edible animal products and of appliances, etc. Minor stations consumed 28 percent of the total; only 8 percent of perishables; 14 percent of paper products; 6 percent of edible animal products; and 18 percent of appliances, etc.*

Due to the inclusion of water and export traffic, the cars which are terminated in a given district do not always exactly measure the goods consumed (or processed) in that district, although for all practical purposes they are so treated. In 1932, 46 percent of rail traffic was consumed (in the sense above used) in 86 metropolitan cities, and 25 percent in 11 such cities. In the order of their consumption, these cities were: New York, 6 percent; Chicago, 5 1/2 percent; Philadelphia, 2 percent; Norfolk, 2 percent; Detroit, 1 3/5 percent; Toledo, 1 1/2 percent; St. Louis, 1 1/2 percent; Minneapolis-St.Paul, 1 2/5 percent; Kansas City, 1 2/5 percent; Cleveland, 1 2/5 percent; and Boston 1 percent. If Norfolk and Toledo are to be omitted for the reason that coal for water transshipment comprises the bulk of their terminations (84 and 80 percent respectively), then four additional cities, Pittsburgh, 1 percent; Baltimore, 1 percent; Buffalo, 9/10 percent; and Cincinnati, 4/5 percent; must be added to bring the total to 25 percent. New York City alone terminated 6 percent of all Raw Material, 6 1/2 percent of Semiprocessed Material, 7 1/2 percent of Necessaries, 5 percent of Auxiliaries, and 10 percent of Accessories. New York City terminated more cars of coal, perishables, Semiprocessed Material, Necessaries, Auxiliaries, and Accessories traffic than any other city; Chicago, more live animals, bulk grain, petroleum products, Rough Material, than any other city; and Houston, more cotton.*

Waterway

The largest volume of water-borne traffic in 1932 originated in the coal fields of Pennsylvania, Ohio, West Virginia, Kentucky, Indiana and Illinois and moved by rail to southern Great Lake ports and thence to the Northwest, also over the Inland Waterway-

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* Analysis 9.1.

Mississippi System (Ohio and its tributaries and Warrior), and by rail to middle Atlantic ports and thence to Atlantic Seaboard territory. The second largest volume consisted of grain and grain products which originated in the northwest, and moved east from Lake Superior and Lake Michigan ports. Other major producing areas of water-borne traffic are the North Atlantic States which originate large quantities of miscellaneous manufactured articles for movement coastwise, to the Southwest via the Gulf, and to the Pacific Coast via intercoastal service; the Pacific States which produce forest products, petroleum, canned goods and sugar for movement to the East; and the Gulf States producing sugar, cotton, sulphur, phosphate rock, rice, petroleum, and naval stores for movement north by river and east by Atlantic Gulf lines.

Petroleum

The refining of petroleum is carried on principally in 21 States with the production of 8 other States included in the production figures of 6 of these 21 States. Of the 820,000,000 barrels of petroleum run to stills in 1932, approximately 44 percent of the total was accounted for by two States: Texas 24 percent and California 20 percent. Four other States produced nearly 30 percent of the total: Pennsylvania, 9 percent, New Jersey 8 percent, Indiana 6 percent and Oklahoma 6 percent. Eight other States, including the production of six additional States, produced 23 percent of the total: Louisiana 6 percent, Kansas, including Missouri, 4 percent, Illinois 4 percent, Ohio 3 percent, Georgia, including Maryland, South Carolina and Virginia, 2 percent, Massachusetts, including Rhode Island, 2 percent, New York 1 percent and Wyoming, including Nebraska, 1 percent. No other State produced more than 1 percent of the total production and the balance of the total run to stills amounting to 3 percent is distributed among seven States, including the productions of two additional States.*

The total petroleum refinery capacity of the 372 refineries of the United States, as of January 1, 1933, amounted to 3 1/2 million barrels daily or 1 1/4 billion barrels per year. Two States had 45 percent of the total refinery capacity: California 23 percent, and Texas 22 percent. Four other States 28 percent; Oklahoma 8 percent, New Jersey 7 percent, Pennsylvania 7 percent and Indiana 6 percent. Nine other States 22 percent: Louisiana 5, Kansas 4, Illinois 4, Ohio 3, Maryland 2, Massachusetts, Wyoming, New York and Arkansas each 1 percent. The remaining 51 percent of the refining capacity is divided among 12 other States.*

* Analyses 8.5, 8.6, 8.7. Source, Bureau of Mines, U. S. Department of Commerce.



The principal refining centers, i.e., those having a daily capacity of 100,000 barrels or over, are located in the Baton Rouge, Louisiana, District; the Chicago, Illinois, Port District; the Houston, Texas, Port District; the Los Angeles, California, Basin District; the New York-Newark Bay District; the Philadelphia, Pennsylvania, Port District; the Port Arthur-Beaumont-Texas City District, Texas; and the San Francisco Bay District in California.

Refineries having aggregate daily capacity of between 10,000 and 100,000 barrels daily are found in 53 other districts in the United States.

One hundred and thirty-three refineries were shut down as of January 1, 1933 in all districts as compared to 372 refineries in operation, but 18 new refineries were being built.

The total number of refineries in operation, shut down and in the process of being built in the United States as of January 1, 1933, amounted to 523 refineries with a daily operating capacity of 3,921,000 barrels.*

## 10. Trade Area Freight Traffic Markets

Railway

The International Magazine Company, after a study of a number of years, was able to divide the continental United States into 701 trade areas from market, industrial and transportation accessibility standpoints. Each of these areas consists of a territory, urban and rural, which generally trades at a common market town or trade center. These areas also have been used by the Bureau of Census, the National Recovery Administration and other governmental bureaus to supplement the information shown in the surveys of the Magazine Company.

The transportation service and traffic of the railways in 1932 have been classified for the purposes of this report with relation to these 701 trade centers.

In analyses 10.1 to 10.15, inclusive, the rail traffic originated and terminated in the United States in 1932 has been grouped in accordance with 701 trade areas. Embraced within these areas are 34,221 cities, towns and villages. These areas embraced the total population of the continental United States in 1930. Of the total population, 42 percent was rural and 58 percent urban, of which 72 percent was

* Analysis 8.4.

represented by the population of the trade center. There were 186 thousand industries served by track, of which 43 percent were located in the trade center. Of the total cars in 1932, 52 percent originated and 66 percent terminated in the trade centers in the United States.

Maps and detailed summaries of the trade areas showing trade centers and all other towns and villages served by railways are included in the Appendices, each of which has been given a code number locating it geographically and also the trade area in which it is situated.

## V FREIGHT COMMERCE

### 11. Factors of Freight Commerce

Railway — The flow of freight as shown herein is gauged largely by the results of the rail carrier survey. Of necessity it was limited in many respects to the flow as evidenced by intercarrier as distinct from local carrier traffic, because no data were available showing origin and destination other than the interchange between carriers at junctions. Owing to this the interterritorial traffic is understated since it embraces only that part of such traffic which requires the services of two carriers. Any interterritorial traffic which was handled by a single carrier could not be separated from intraterritorial traffic. It is impossible to measure the amount of this traffic.

### 12. Local Commerce

Railway — Traffic which is handled by a single carrier is relatively less important in amount than formerly, or than intercarrier traffic. In the United States, as a whole, for 1932, the car miles of such traffic constituted but 23 percent, the ton miles but 26 percent, and the revenue but 31 percent, respectively, of the car miles, ton miles and revenue of all traffic. The relative importance of the local traffic of principal commodity groups is shown in analysis 12.1.

Waterway — Water traffic may be divided into strictly port-to-port business and business interchanged with other carriers at either one end of the water movement or both. The Atlantic Coastwise business was reported as about 50 percent interchanged with railroads while Atlantic Coast Inland carriers interchanged about 2/3 of their traffic with railroads. The Inland-Mississippi system lines reported more than 1/2 of their tonnage, Great Lakes common



carriers about 5/6 of their traffic, Pacific Coastwise common carriers less than 1/10 and Pacific Coast Inland carriers 1/3 of their tonnage as interchanged with railroads.*

The reports of the other carriers in some cases were indefinite and in others included duplications, so that actual percentages could not be determined. A study of the commodities handled and of the production and consumption areas, however, indicates that not more than 1/3 and probably considerably less of the water-borne tonnage was strictly port-to-port or local traffic.

### 13. Intercarrier Commerce

Railway — Traffic which is common to two or more carriers is responsible for 77 percent of the carload car miles and produces 69 percent of the rail carrier revenue. Of the total carloads originated, 51 percent are interchanged an average of over 2 2/3 times each. Commodity distributions of interline traffic, originated and handled intermediately, are shown respectively in analyses 12.1 and 13.1.

Waterway — At least 50 percent of water-borne tonnage received a rail haul at either one end or both ends of the water movement. Detailed figures as to the amount of traffic which involved a second water carrier or intercity highway movement were not furnished, but that amount was indicated to be considerable.

### 14. Intraterritorial Commerce

Railway — For convenience in examination, carrier returns showing interchange of cars have been separated into two classes, intraterritorial and interterritorial. Intraterritorial is taken to be the equivalent of interchange between two carriers, each of which serves the same territory. This is not strictly true for (a) one or both carriers may serve more than one territory; (b) the car may be passing intermediately, later to be interchanged interterritorially; or (c) carrier lines so overlap that what appears to be an interterritorial interchange from a carrier standpoint is an intraterritorial interchange geographically.

Of the total cars interchanged (31 million), 23 million were intraterritorial, of which 800 thousand were between carriers at New England Junctions; 6,300 thousand carriers at Trunk Line Junctions; 7,100 thousand at Central Junctions; 800 thousand between Lake-Gulf Carriers; 1.300 thousand between

* Report of Federal Coordinator of Transportation, 73d Congress, 2d Session, Senate Document 152, Appendix A, Table II.

Southeast Carriers; 3,100 thousand between Northwest Carriers in Western Trunk Line Territory; 291 thousand between Pacific Northwest Carriers; 2,700 thousand between Southwest Carriers at Western Trunk Line, Southeastern and Southwestern Junctions; and 600 thousand at Pacific Southwest Junctions. Detailed statements at all important junctions are shown in analyses 14.1, 14.2 and 15.1.

Waterway

Waterways may properly be divided into five geographic territories, namely, Atlantic Coast, Great Lakes, Mississippi System, the Gulf of Mexico and the Pacific Coast. In the Atlantic Coast territory, there were reported in 1932, 5 million tons of intraterritorial traffic, in the Great Lakes territory the reported intraterritorial tonnage amounted to 25 million tons, on the Mississippi System it was 7 million tons, in the Gulf of Mexico the reported domestic intraterritorial tonnage was less than 1/2 million tons, and on the Pacific coast it amounted to 3 million tons.*

An analysis of the flow of traffic is pertinent to any study of water transportation. The more nearly balanced traffic movements are, the greater is the serviceability that can be obtained. On the Great Lakes, in 1932, coal and coke, which moved predominately north and westbound, accounted for 52 percent of the total tonnage handled, while grain, grain products, ore, and forest products, which moved principally east and southbound, amounted to 30 percent of the total. Compared with other years, the movement of ore was abnormally low. In the past there has usually been a more even balance of traffic on the Great Lakes.

On the Inland Waterway-Mississippi System, in 1932, the southbound movement of coal, coke, iron and steel was 55 percent of the total tonnage handled in this service, and sugar and petroleum products, which were among the principal northbound commodities, constituted 22 percent of the total.

In Intercoastal service the commodities which can be reasonably earmarked as moving eastbound, principally forest products and canned goods, constitute about 36 percent of the total tonnage handled and manufactured food, l.c.l., iron and steel, sulphur, and miscellaneous, which moved principally westbound, amounted to about 41 percent of the total tonnage.#

The great variety of commodities handled and the large number of routes operated in the other three territorial groups do not permit the same degree of definite allocation of movements by commodities, as in the case of the Great Lakes Inland Waterway-Mississippi and Intercoastal groups. A study of the individual reports in these groups, however, indicates in practically all cases a reasonably well-balanced flow.

* Report of Federal Coordinator of Transportation, 73d Congress, 2d Session, Senate Document 152, Appendix A.
\# Exhibit 803.



## 15. Interterritorial Commerce

Railway

For the full year 1932, 25 percent of all carloads originated moved from carriers serving one to carriers serving another of the three Classification Districts.* Of the carloads handled (counted once) by Eastern District Carriers, 17 percent moved to or from the Southern or Western District Carriers. Of those handled by the Southern District Carriers, 41 percent moved to or from the Eastern or Western District Carriers. Of those handled by the Western District Carriers, 19 percent moved to or from the Eastern or Southern District Carriers.

The movement of all cars which were terminated on December 13, 1933 was analyzed in detail to show actual flow between rate territories.

Carloads handled in this test did not show relatively as large a flow between districts as the carloads for the entire year 1932, due doubtless to seasonal variation. The interdistrict cars were 21 percent of the total carloads which is about 16 percent below the flow of the year. This 34 percent of the carloads, however, accounted for 35 percent of the total revenue which (making allowance for the understatement of the one-day test above noted) indicates that about 40 percent of the entire carrier revenue is received from cars which moved between the three districts.#

From a rate territorial standpoint and upon the basis of the one-day test only, without correction for the understatement, 34 percent of the total cars moved in more than one rate territory. Also, without correction, 54 percent of the carrier revenue was produced by cars which moved from one rate territory to another. The only territories in which the revenue of interterritorial cars was less than 50 percent were New England, where it was 42 percent, and Trunk Line where it was 33 percent. In Pocahontas Territory, Pacific Northwest and Pacific Southwest, the revenue from interterritorial cars in each case constituted approximately 70 percent of the total carrier freight revenue of the territory.ø

To facilitate study of the flow of traffic between territories, the principal gateways or junctions at which such traffic was interchanged were grouped into four classes of frontiers: Hudson River Gateways, principally New York City and Albany-Troy, where business between New England and Trunk Line Territories is interchanged; Transeast Gateways, principally Washington, Cincinnati, etc., where business between

* Analyses 15.2 and 15.3; l.c.l. cars are deducted on the basis of one day's test - December 13, 1933.
\# Analysis 16.1.
ø Analysis 16.8.

The East and South is interchanged; Transcontinent Gateways, principally Chicago, St. Louis and Memphis where business between the East and South upon the one hand and West upon the other hand is interchanged; and Transwest Gateways, principally Kansas City, Ogden-Salt Lake City and Omaha where business between the Northwest and the Southwest is interchanged. The flow of traffic is uniformly east or northbound; at the Hudson River Gateways, 67 percent eastwardly; at Transcontinent Gateways, 52 percent eastwardly; at Transeast Gateways, 71 percent northwardly; and at Transwest Gateways, 56 percent northwardly.*

The ratio of empty cars to loaded cars interchanged at Hudson River Gateways was 66 percent; at Transeast Gateways, 90 percent; at Transcontinent Gateways, 90 percent (at Chicago, 93 percent); at Transwest Gateways, 87 percent. The percentage of empty cars to loaded cars in the direction of traffic at Hudson River Gateways was 15 percent; at Transeast Gateways, 30 percent; at Transcontinent Gateways, 57 percent; and at Transwest Gateways, 40 percent.#

Waterway — The major interterritorial movement by water is between the Atlantic and Pacific Coast territories. In 1932 that reported amounted to 3 million tons. The movement between the Atlantic Coast and Gulf territories reported was 3 million tons and a little less than 1 million tons were reported as moved between the Pacific Coast and the Gulf.ø These are the only interterritorial movements in which through services were operated. Undoubtedly some tonnage moved between the other territories but such tonnage was transshipped en route.

Petroleum — Crude petroleum moved by pipe line from the producing areas to the important Texas and Oklahoma inland refining centers such as West Tulsa, Allen, Cushing, Enid, Oklahoma City, Okmulgee, Ponca City, Drumright, Ardmore, and Blackwell, Oklahoma; to refineries or loading facilities located at Texas Gulf ports including those in the Houston Port district or in the Port Arthur-Beaumont-Texas City-Baytown district, and Engleside, Big Spring-Colorado, West Dallas, El Paso, Tyler, Fort Worth, Henderson, Wichita Falls, Borger, and San Antonio, Texas; Baton Rouge, New Orleans, Meraux, and Shreveport, Louisiana; or northeastwardly to the refining centers at Arkansas City, Augusta, Eldorado, Neodesha, Coffeyville, McPherson and Wichita, Kansas; El Dorado, Arkansas; Kansas City and Sugar Creek, Missouri; Wood River, Robinson, Lawrenceville, Lockport, and the Chicago Port district, Illinois; Cincinnati, Cleveland, Lima, and Toledo, Ohio; or to other refineries scattered throughout the East and Middle West.

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* Analysis 15.1. # Analysis 15.1.

ø Report of Federal Coordinator of Transportation, 73d Congress, 2d Session, Senate Document 152, Appendix A.



The crude oil moved by pipe line to the Texas ports is refined either at these points or reshipped in tank vessels to the great Eastern refinery centers at the New York-Newark Bay district; the Philadelphia, Pennsylvania, Port district; the Baltimore, Maryland, district; and in the Boston, Massachusetts district, principally at East Braintree and Everett, Massachusetts. In some cases crude petroleum moves directly by pipe lines to refining centers in the Interior Eastern Cities and in other cases it is transshipped from tankers to pipe lines and moved as crude to the interior refineries.

The refined petroleum products are usually distributed in the sections of the United States in which the refineries are located or within a reasonable distance from such refineries, with the notable exception of the products refined in the Tulsa, Oklahoma, and Borger, Texas, area which are transported long distances by gasoline pipe lines. The average rail haul of refined petroleum products is approximately the same in all traffic areas despite the restricted areas of production because of the fact that the products are consumed in all regions and the location of refining centers is so scattered as to make long interterritorial movements of refined products usually unnecessary. The crude petroleum produced in the California field moves in large quantities by pipe line to the refining centers or to the transshipment ports located principally in the Los Angeles, California, Basin district; the San Francisco, California, Bay district; or in the Port San Luis-Avila, California, sections. A considerable amount of California crude petroleum is also refined at the interior refineries at Bakersfield and Lebec, California. The crude petroleum produced in the Rocky Mountain region is refined for the most part at the refineries located in the Caspar, Graybull, and Rawlins-Pasco districts, in Wyoming, or at smaller refining centers in Wyoming, Montana, Utah and Colorado.

The crude petroleum produced at the wells in the Gulf Coast district is either refined at the refineries located within the areas or moved to the Texas and Louisiana Gulf ports where it is either refined or transshipped as crude to the Eastern seaboard refineries. The crude petroleum produced in the Lima-Indiana, in the Illinois-Indiana and in the Appalachian districts is usually refined at nearby refineries in these respective fields.

## 16. National Aspect of Commerce

General

The foregoing analysis of interterritorial traffic demonstrates that with the growth and development of the country, commerce is not confined to rate territories or even the three grand district divisions of the country, but has assumed a definite national aspect, and that interterritorial traffic is now dominant. Nor, as we shall hereafter see, can the continued maintenance of these artificial territories for ratemaking and classification, generally coextensive with carrier ownership, be justified on differences in traffic or transportation characteristics. The fact that 40 percent of the freight revenue arises from interdistrict traffic and 54 percent from interterritorial traffic, appears to warrant reconsideration of the question of where and to what extent regional grouping of carriers from either a rate or a service standpoint is now justified.* This is particularly true in view of the fact which appears from subsequent parts of the report that these artificial boundaries distort rate structures, interfere with speedy and free flow of commerce and result in large transportation wastes.

Railway

For statistical purposes generally and for ratemaking purposes quite frequently the carriers are grouped into three great Districts; Eastern, Southern and Western, which are coextensive with the three rate classification territories. With several unimportant exceptions, the carriers, individually, as organized groups, and with respect to rate structures and policies, are not markedly different. The extent to which these regional walls are being penetrated by the integration of commerce is shown by the amount of interterritorial business. Insofar as the full year 1932 is concerned, data showing interterritorial movements are confined to the interchange between carriers of the three districts.#

Excluding merchandise (l.c.l.) cars there were 4 1/2 million cars interchanged between the three districts, exactly 25 percent of the total carloads originated. Of this amount 1 million interchanges were between Eastern and Northwestern Carriers; 700 thousand between Eastern and Southwestern Carriers; 2 million between Eastern and Southern Carriers; 300 thousand between Southern and Northwestern Carriers: and 500 thousand between Southern and Southwestern Carriers.#

Dealing with cars which were examined in the one-day test, we find that out of a total of 49 thousand carloads, 10 thousand or 21 percent were interdistrict, indicating that the interterritorial flow on the test day was 16 percent below the flow of the year.ø

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* See section 15, Factual Summary, Railway.
\# Analysis 15.1 et seq. ø Analysis 16.1.



It was possible to classify the interchanges of these cars between rate territories as well as districts. About 25 percent of the carloads originated in New England moved to other rate territories; 23 percent of those originated in Trunk Line Territory; 33 percent of those originated in Central Territory; 65 percent of those originated in Pocahontas Territory; 32 percent of those originated in Southeastern Territory; 36 percent of those originated in Western Trunk Line Territory; 38 percent of those originated in Southwestern Territory; 38 percent of those originated in the Pacific Northwest; and 34 percent of those originated in the Pacific Southwest. Of the total cars, 66 percent were local to the rate territory, and 34 percent interterritorial.*

The number of cars, however, inadequately measures the relative importance of this traffic. The 21 percent of total cars which were interdistrict accounted for 33 percent of total revenue and the 34 percent of interterritorial cars, for 55 percent of the revenue; the 25 percent in New England for 42 percent of the revenue; the 23 percent in Trunk Line for 34 percent of the revenue; the 33 percent in Central Territory for 51 percent of the revenue; the 65 percent in Pocahontas Territory for 72 percent of the revenue; the 32 percent in Southeastern Territory for 53 percent of the revenue; the 36 percent in Western Trunk Line for 55 percent of the revenue; the 38 percent in Southwestern Territory for 59 percent of the revenue; the 38 percent in the Pacific Northwest for 68 percent of the revenue; and the 34 percent in the Pacific Southwest for 71 percent of the revenue.#

The commodity movement of the test day is reflected in analysis 16.3 et seq. As a general rule the proportion of interterritorial traffic increases with the value of the commodity (and from a revenue standpoint of the traffic). While there are important exceptions, in most cases higher proportions of interterritorial traffic are found in Necessaries and Accessories traffics.

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* Analysis 15.1.
\# Analysis 16.1.

# THE SERVICE

## VI ELEMENTS OF TRANSPORTATION SERVICE

### 17. Definition

Shipper — Of the total carload tonnage which moved by highway, the motivating reason of 57 percent of the shippers was speed; of 9 percent was complete service; of 19 percent, regular or dependable service; of 26 percent, convenient service; and of 34 percent, more adaptable and convenient equipment.*

Petroleum — The service requirements of petroleum traffic are onerous and arise out of the nature of the commodity handled, the relatively restricted areas of the production of crude petroleum, the scattered location of refineries in many parts of the United States, and the wide distribution of the consuming markets.

## VII TRANSPORTATION SPEED

### 18. Basis

General — Throughout the United States today we have a "hand-to-mouth" buying habit which will probably continue for many years to come. There is, therefore, important need for very rapid transportation of small shipments; many small orders are placed daily by telephone for deliveries the next day. This means that transportation facilities (rail, motor or other) must be available for the quick transportation, from day to day, of small shipments. The "hand-to-mouth" buying habit extends in large measure to the buying of large quantities. This means that the carrier transporting large quantity shipments must be prepared to transport these large quantities quickly.

Shipper — In answering the question "For what purpose is the right to route desired", 71 percent of the shippers answered that it was desired to compel good service, a cliché commonly used to mean fast service.

* Analyses 21.1, 26.1, 30.1, 30.2, 40.1.





Waterway — In many instances, the longer time required by water carriers is due to the circuity of routes. In 1932, the estimated water line service performed amounted to 53 billion ton miles. If the same tonnage had moved between the same points by rail lines, only 37 billion of the ton miles would have been created or 70 percent of the waterline effort.* There are many instances, however, where water services are operated on schedules comparing most favorably with land transportation services, particularly on the shorter coastwise runs, those under about 500 miles, and on the Great Lakes. The factor of speed is of utmost importance as there are definite limits beyond which even lower prices cannot attract business in competition with transportation media offering faster service.

### 19. Determinative Factors of Speed

Waterway — The question of speed is not confined merely to actual number of miles covered within a certain number of hours while in transit. Departure and arrival time and frequency of schedules play a most important part in measuring the serviceability of water transportation. Size of vessels and methods used in loading and discharging are also important factors in determining actual speed of service rendered.

Petroleum — Continuity and regularity of movement measure the speed requirements of crude petroleum rather than the rate of the passage of the oil past a given point. Petroleum is moved through pipe lines usually at a rate of speed ranging from one to five miles per hour, depending upon the size of the line, the capacity of the pumping facilities, the topography of the district in which the oil is moved, and the urgency of the demand for the oil. Once started, however, the flow is continuous. The transportation of petroleum is directly related to the refining operation and the continuous operation of refineries depends upon continuity in transportation service, which is also necessary in order to avoid the construction of huge and costly storage facilities, and the consequent cost of rehandling between such facilities and the refineries. The consumers of petroleum were limited in 1932 to the products supplied by 372 operating refineries.# The movement to these refineries is a continuous movement and not a broken day-to-day carload or train load lot movement, or intermittent vessel lot movements by water. Deliveries of crude petroleum by tank steamer are usually in lots of approximately 75,000 to 80,000 barrels per vessel. Pipe lines and tankers are much slower in speed of

* Analysis 70.1.
\# Analysis 8.4.

transportation measured in miles per hour, but the fact that the railroad tank car is the unit of rail transportation tends greatly to handicap the railway as a transport facility, despite its greater speed in miles per hour. Because of the extremely limited number of consumers of petroleum traffic, and the large and continuous quantities in which they require deliveries at the refineries, the transportation service requirement is one not of a car, but of a regular, dependable and continuous supply when oil is required. This condition is further emphasized by the vertical integration of the refineries, the crude producers and the pipe lines which in many cases results in the movement being from a consignor to itself over a closely affiliated means of transportation. A serviceable system of transportation for crude petroleum traffic, whether by pipe line, steamship or rail, must be built upon the foundation of continuity of movement.

## 20. Present Transport Speed

Shipper

Examination of several thousand typical movements indicates that for all distances reported (the longest reported highway haul was 2,000 miles) door-to-door service by highway in all States was faster than rail service except in two instances - in Florida for the 300 mile block where rail was faster, and in Virginia for the over 500 mile block where the speeds were the same. The average haul in the 50 mile block was 33 miles. The United States average of the truck time required was 4 hours; for the rail 28 hours. The average haul of the second block (50 to 100 miles) was 80 miles; the average truck time 8 1/2 hours, rail time 33 hours. The average haul of the third block was 156 miles; truck time 12 1/2 hours; rail time 37 1/2 hours. The average haul of the fourth block was 259 miles; truck time 18 hours, rail time 45 hours. The average haul of the fifth block was 396 miles; truck time 27 hours, rail time 57 hours. The average haul of the last block was 781 miles; truck time 51 hours, rail time 85 hours.*

On the average, the truck delivers on the first morning within a radius of 149 miles, the train within a radius of 13 miles. By the second morning the truck's area has increased to 534 miles and the train's to 149 miles. The third morning finds the truck deliveries 920 miles away, the train 419 miles away; and by the fifth morning the truck has delivered within 1,200 miles and the train within 900 miles. These are average speeds for the United States. Generally the speed of both truck and train is slower in the East and South. For distances under 150 miles, Southwest trains are faster than those of other sections; for over 150 miles, the

* Analyses 20.1, 20.2.



Northwest train makes the best overall time. The truck time is about the same in the Northwest and Southwest.*

The foregoing, however, should be viewed in the light that the service compared is from door to door, and that the averages which include rail terminal time tend to distort the short distance comparison. There are many cases where the individual train schedules are faster than those of the highway.

Railway

The causes for the relatively poor showing of the rail carriers are not difficult to find. Speed restrictions for freight service on good tangent tracks obtain on 99 rail systems which replied to the organization survey. One of such carriers permitted speeds under such conditions of over 55 miles per hour and only two of over 50 miles per hour. One third of the carriers restricted speeds below 36 miles per hour; one half below 41 miles per hour; three quarters below 46 miles per hour; and 98 percent, below 51 miles. In addition to these restrictions, there are numerous agreements between carriers fixing the minimum number of hours within which certain traffic will be delivered.#

The chief cause of rail sluggishness, however, lies in the yard. All railway cars which were terminated on December 13, 1933 were analyzed to determine the car service. The average haul of the carload commodities was 376 miles; the average elapsed hours from the time the car was placed for loading until it was released by the consignee after unloading were 144 hours - a speed of 2.6 miles per hour. About 68 hours of the 144 hours were utilized by the shipper and consignee in loading and unloading the car, about 34 hours each. The speed of the car while it was in the carrier's possession and subject to movement was 5 miles per hour. On the average it was detained by the carrier in the origin terminal about 11 hours before it departed in a road train and at the destination terminal about 15 hours before it was delivered to the consignee. In addition, it was detained at intermediate terminals about 27 hours, so that out of the total of 72 hours of carrier time, only 23 hours, or less than one day, were spent in road trains. While it was in road trains it moved at a speed of about 16 miles per hour.ø

Several factors contribute to terminal delays but all are traceable directly to the practice of assembling carlot units into long trains for movement between terminals. Generally, and this is especially true upon railroads of thin traffic, the long freight train cuts down materially the

* Analysis 20.2.
ø Analysis 20.3.
\# Analysis 20.5.

number of schedules which it is possible to operate, and as a result carriers in 1932, on the average, operated but 2 freight trains each way per day.* Even in the territory of maximum utilization, the Trunk Line, freight trains numbered less than 4 each way per day. Initial delays awaiting the next schedule, under such circumstances, are inevitable.

An important factor which also is directly attributable to the assembly method is the amount of time spent in intermediate yardings which, as shown above, was 17 percent greater than the time actually spent on the road. These intermediate yardings are due in large part to the necessity for reclassification of the cars, a need which expands directly in proportion to the length of the train.

A further important cause of these terminal delays lies in the interchange of cars between carriers Seventy-seven percent of the total cars were interchanged. The number of carload interchanges, however, aggregated 30 million, which was 12 million in excess of the total number of carloads originated. This means that, on the average, each carload of freight originated was interchanged 1 2/3 times.# When it is remembered that generally, but with important exceptions, each carrier operates its trains and fixes its schedules primarily with the local traffic in view, the delays which result from interchange can be appreciated. This is true at the great terminal gateways as well as at the intermediate junctions. Often freight trains are scheduled to depart in the evening and to arrive in the morning. At such terminals there is often a delay to intercarrier movements of 12 hours or more due to scheduling. In other cases at such terminals, a transfer from the yard of one carrier to that of another - in some instances involving an intermediate switching line - is necessary. Delays in excess of 24 hours at such terminals are not uncommon.

Since train schedules are fixed primarily with respect to departure and arrival at the principal terminals of the operating carrier, with numerous exceptions the time of arrival or departure at intermediate junctions is not considered of prime importance. The loss of time in interchange which results from this fact is further increased by the relative infrequency with which the train schedules are operated.

Waterway — In 1932, the average speed of all waterline carriers reporting, including time of loading, transit and discharging, calculated in land miles, was 6.8 miles per hour. Atlantic Gulf Carriers showed

* Analysis 70.6.
\# Analyses 14.2, 15.1.



the highest average, 10.1 miles per hour, while Inland Waterway service was operated at an overall speed of only 3.6 miles per hour. Carriers in the other four groups operated at average overall speed remarkably close to the general average ranging from 7.6 on the Great Lakes to 6.4 miles per hour on the Pacific Coast.* Wide variations, of course, occurred in all groups, and the actual operating speed of vessels was considerably higher than the figures shown above, because much time was consumed in terminal operations.

Contract and private carriers operated generally on irregular schedules governed largely by volumes of traffic available. On the Atlantic Coast, the Pacific Coast and the Great Lakes, there were a considerable number of common carriers who operated daily services on the more important runs. There were, however, a larger number of operations conducted in these three groups on triweekly, twice-weekly, weekly, and even fortnightly schedules. In the Atlantic Gulf service twice-weekly, weekly, and fortnightly services only were offered by common carriers. Intercoastal service by common carriers ranged from twice-weekly to monthly. On the Mississippi system one daily common carrier service was reported. Six common carriers operated semiweekly, five weekly, and nine less frequent services.*

## 21. Potential Speed

Railway — The railway has the potential ability to operate on the road at speeds which are far in excess of those open to other carriers. The fact that over half of the carriers now permit maximum freight speeds of over 40 miles per hour is eloquent testimony of this fact. It is doubtful, however, whether the railway can possibly meet the highway overall speed by any increase in road speed, however great. The average haul of 375 miles in 23 hours running time is approached by the highway's accomplishment of 356 miles in 24 hours. The highway time, however, is the elapsed time from door to door. Since in 23 hours running time the railway must spend over twice that time in terminal operations, no increase in road speed could affect that situation.#

* Exhibit 802.
\# Analyses 20.2, 20.5.

### 22. Effect of Speedy Service

Shipper — Of the total carload tonnage reported by shippers as moving by highway in 1932, 9 million tons, or 57 percent of the total reported tonnage, was moved by shippers who stated that they used the highway partly on account of its superior speed. Speedy service appears to have been of particular importance to dealers in cooperage material, paper, beverages and liquors, packing house products, bakery goods, cereals, masonry, petroleum products, canned goods and groceries, paints, varnishes and miscellaneous manufactures, iron and steel, and automotive vehicles and parts. The sample of highway traffic obtained in the shipper survey was probably lower than the sample of the traffic of other forms of carriers, owing to the fact that only the larger shippers replied. It was impractical to circularize farmers, retailers and other small shippers, who probably use the highway to greater degree than do the larger shippers. The returns to the questionnaire indicate that between 50 and 100 million tons moved by highway in that year in part because of superior speed.*

## VIII COMPLETENESS OF TRANSPORTATION SERVICE

### 23. Basis of Demand for Complete Service

### 24. Present Collection and Delivery Service

Shipper — The average cost to the shipper in draying carload freight to and from team tracks was $1.21 per ton or $35 per car. This cost varied from 13 cents per ton ($2.80 per car) in the case of cotton business to $5.42 per ton or $76 per car in the case of boots and shoes business. These 2 businesses, however, are extremes. There were 4 businesses in which the cost was under 30 cents per ton; 20 over 30 cents and under $1; 10 between $1 and $2; 7 between $2 and $3; 2 between $3 and $4; and only 1 over $4 per ton.#

Comparing these costs for general commodity groups with the average revenue per ton of the general groups∅ embracing chief commodities handled, shown on analysis 49.1, we find that the drayage cost of Rough Material amounted to 16 percent of the average freight charge; of Raw Material 11 percent; of Semi-processed Material 7 percent; of Necessaries 17 percent; of Auxiliaries 8 percent; and of Accessories 14 percent.

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* Analysis 22.1. # Analysis 24.8.
∅ Analysis 45.17 et seq.



The average cost to shippers of providing and maintaining industrial delivery tracks was 6 cents per ton or $1.70 per car (one terminal).*

Railway — Of the total car deliveries (including l.c.l.) in 1932, 32 percent were on house tracks, 10 percent on team tracks, and 58 percent on industry tracks.# Dealing with terminated cars only, 91 percent of the house track cars were l.c.l. and 9 percent carload. Of the l.c.l. deliveries 95 percent were house track and 5 percent other tracks,∅ which indicates that for all commodities/ and the country as a whole the carload cars on house tracks may be taken as offsetting l.c.l. cars on other tracks, the team track deliveries as the equivalent of carloads not collected or delivered, and the industry track deliveries as the equivalent of carloads collected and delivered. On this basis, 82 percent of rail carloads were collected or delivered on industry tracks in the country as a whole; 87 percent in New England; 88 percent in Central and the Pacific Territories; 93 percent in Pocahontas; 84 percent in Trunk Line and the South; and 83 percent in Western Trunk Line and the Southwest.

In analyses 24.1 et seq., the car track terminations in 1932 are shown by commodity groups. The difficulty here is that the connection deliveries are not classified by tracks. From analyses 105.4 and 105.5 it is possible to distribute these connection deliveries between tracks upon the basis which all commodity deliveries (originations and terminations) were distributed. For the United States as a whole, out of 5,718 thousand multiple carrier deliveries, 5,165 thousand (91 percent) were to industry tracks, 3 percent to team tracks and 6 percent to house tracks (including of course l.c.l. cars). If the latter be deemed the equivalent of house track cars, the industry track percentage rises to 97 percent. Applying the latter percentage to the connection delivery terminations shown in analysis 24.1, it can be estimated that of the carload terminations, 78 percent were on industry tracks and 22 percent on team tracks.

It was not possible from available data to analyze carload collections (originations) by commodities for the year 1932. Dealing with the traffic as a whole, it would appear that if anything a larger proportion of the cars were collected than delivered - about 90 percent.**

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* Analysis 24.8. # Analysis 105.4. ∅ Exhibit 107.
/ This is not true of individual commodity groups.
** Analysis 24.6. Industry and connection track cars originated about 61 percent of total cars originated. Industry and connection track cars terminated about 57 percent of total cars terminated.

A commodity track analysis of collections on the one-day test confirms this conclusion.* From this analysis it appears that about 86 percent of cars originated were on industry tracks.

The extent to which the rail service is thus incomplete varies widely among the different commodities. Using the method above outlined, it appears necessary to dray to the team or house track about 27 percent of grain; 31 percent of perishables; 44 percent of live animals; 31 percent of forest products; 47 percent of cotton, hay and tobacco; and 29 percent of textiles and leather.# With the exception of the last named, these are raw or home-processed farm products. On the other hand$\phi$ it is necessary to dray from the house or team track 54 percent of sand, stone and gravel; 66 percent of perishables; 24 percent of live animals; 28 percent of cotton, etc.; 33 percent of paper; 45 percent of processed cereals; 46 percent of miscellaneous farm products; 31 percent of edible animal products; 28 percent of manufactured foods; 47 percent of building materials; 23 percent of iron and steel articles; 49 percent of appliances, furniture, machinery and automobiles; and 46 percent of glass, tile, etc.

From the foregoing, it appears that complete collection and delivery is much more generally accorded the processing agency than is accorded either the original producer, or the retailer or consumer. While this may appear to be favoritism to the "big shipper", it rested upon the sound business principles that it was only this class of shippers whose volume justified the expensive industry track facilities prior to the time when truck delivery was possible.

Waterway — While it is true that only a small part of water-borne tonnage actually originates or terminates at the ends of water routes and although at least half of the total water traffic was handled by rail carriers for part of the complete movement, on much of which private siding service was afforded, the demand for door-to-door service by water carriers has become increasingly insistent. Some important carriers, particularly on highly competitive movements between the larger cities, have inaugurated collection and delivery in conjunction with highway operators.

Petroleum — The most efficient method of collecting the supply from the many wells, the production of which must be combined in order to provide the necessary supply for the refineries, is the gathering pipe line. Approximately half the pipe line mileage of the country consists of these gathering lines,/ the remainder being the trunk lines which connect the points at which the petroleum is

* Analysis 24.7.
\# Analysis 24.7.
$\phi$ Analysis 24.1.
/ Analysis 70.1.



concentrated by the gathering lines with the refining centers. Gathering lines quite generally are temporary in their nature, relatively cheaply constructed, so that they may be taken up and relaid in new locations as the crude production declines in one field and new fields are opened.

Further facilities necessary for the transportation of crude petroleum are storage facilities at the points of origin and destination. The storage facilities at the concentration points are really parts of the gathering line facilities, while those at destination are parts of the trunk line or refining facilities. Another type of storage facilities is the working storage tanks used in the operation of pipe lines in order to maintain a proper flow in the pipe lines by providing storage for the oil en route until the lines ahead are ready to receive it. Tanks of this type are especially important where the pipe lines traverse sections of the country with uneven topography so that the rate of flow causes an accumulation at low points in excess of the amount which can be moved upgrade conveniently by pumping stations.

Still another type of storage facilities includes tanks used for the storage of the refined petroleum, including gasoline, kerosene, and other refined products awaiting sale or distribution. While the consumption of gasoline is quite widespread throughout the United States, it is not uniform throughout the year. Many refineries find it necessary to balance their manufacturing and distribution operations during the year by the construction of large tank farms. This class of storage facilities is not properly a part of the transportation service, but rather a plant accessory.

Until recently, gasoline was distributed from refineries by railway tank cars to local stations where the oil was emptied into small storage tanks, from which it was distributed to the local dealers by tank trucks. This method of transportation involved extra handling at the refineries and at the distribution points. With the development of hard surfaced roads and large tank motor trucks, there has been a steadily and rapidly increasing movement of gasoline from the refineries or substations direct to the local dealer by tank motor truck eliminating entirely the intermediate rail haul. In a number of cases pipe lines have been constructed or old crude petroleum pipe lines have been adapted to transport refined petroleum products from the refineries to distribution centers from which the refined oils are transported by motor trucks to the retail distribution stations.

### 25. A Universally Complete Service

General — Study of all known designs of demountable bodies or containers, to be used as an instrument in coordinating rail, highway, and waterway transportation, as well as methods and devices for transfer between car, truck, boat and shipper's platforms, in actual operation and from models and drawings, indicates that an immediate opportunity is presented in the highway movement of containers to and from railroad team track yards and marine docks. The amount of traffic available and the approximate savings which would result through the use of containers compared with the present method of unloading from railroad cars into trucks and vice versa. are shown in analysis 25.1.

In many instances where industries now have rail connections it would be quicker, more convenient, and less expensive to make delivery or receive quantity shipments in containers via highway, instead of through present switching arrangements.

Analysis 106.13 covers a wide range of container movements, from average loaded hauls of 1 1/2 miles up to 33 miles, with a total distance traveled per truck of from 35 to 150 miles per 8-hour day. This takes care of the most congested conditions in our largest cities, as well as movement of containers by highway in place of way or branch line trains. The basic tractor semitrailer operating costs shown in the analysis are, of course, average costs and are subject to revision to meet specific conditions. In order to attain the operating performance at the expense shown, a unified highway terminal operation under one central management for each metropolitan area is not only highly desirable but essential. Such a set-up could be effected by present terminal truck operators without loss of corporate individuality and with increased profits for each company joining the terminal organization. No huge amalgamation of trucking companies is indicated - merely a cooperative effort on the part of existing companies to eliminate duplication and waste in present operating methods.

### 26. Effect of Complete Service

Shipper — Shippers were not asked to state whether the complete service available by highway influenced the selection of a transport agency. That it was influenced is shown by other facts reported. The shippers were asked to report the amounts which they paid for drayage (carlots only) to and from railheads. Those who reported such costs, of necessity used team track service in some degree. Whether or not others who did not report these costs failed to do so because there were none or because the records were not available is not known.



The shippers who reported the costs shipped or received about 5 percent of the total tonnage but over 9 percent of the highway tonnage. In other words while this class of shippers represented a relatively small part of the total tonnage, they utilized the highway to a 80 percent greater degree than the shippers who enjoyed the benefit of complete delivery through side tracks, assuming all who reported no costs had such tracks. This fact is significant since this class of off track responding shippers is more typical of the smaller individual shippers from whom relatively few returns were had.*

Considering the specific business of those who reported drayage charges, we find that 35 percent of their perishables moved by highway, 25 percent of live animals, 27 percent of lumber, 23 percent of beverages and liquors, about 50 percent of packing house products, canned goods, and groceries, and between 20 and 40 percent of furniture, leather goods, textiles, boots, shoes and clothing.#

## IX SCHEDULE CORRELATION

### 27. Demand for Schedule Correlation

### 28. Extent of Present Schedule Correlation

General — The facility to effect correlation varies almost directly with the number of sales units moved in a schedule. Correlation can be accomplished whenever the sales transport unit is synchronized with the unit. Thus, in the case of motor truck lots, the departure or arrival can be synchronized with the patron's requirements. The "low" in utility value is probably reached in the case of a weekly or semiweekly sailing (either boat or train). In the case of the water carriers, the handicap is one inherent in the nature of the transport facility used. It is generally assumed that the same thing is true of the rail carrier. With an average of two schedules per day, train operation begins to approach the inflexibility of marine operation. A further cause of infrequent schedules is the tendency of common carriers, rail and water alike, for competitive reasons, to schedule their arrival and departure at about the same time instead of staggering them throughout the day.

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* Analysis 26.1.
\# Analysis 26.1.

Railway — For a number of years past it has been accepted as approved "railroading" that the ton-mile unit cost of operating a train varies inversely with the size of the load. The tendency has been toward bigger and bigger power, cars and trains. There is no doubt that under the conditions which then existed this policy did result in lower costs and did enable the railroads to surmount constantly rising wage costs. This policy of heavy trains resulted, of course, in relatively fewer trains. Indeed that was its primary objective. Foregoing, for the time being, only the question of operating economy, it must be conceded in all fairness that the policy did not promote the cause of good service.

Irregular service is a further consequence of infrequent schedules. This arises from the fact that many different cars must be assembled into a single schedule. The movement of all cars depends upon the movement of the most sluggish. This is true of receipt in the initial terminal and also in intermediate terminals and junctions, and in road operation.

### 29. Potential Schedule Correlation

### 30. Effect of Schedule Correlation

Shipper — Of the reporting shippers, those shipping or receiving 11 percent of the total tonnage and not quite 20 percent of the highway tonnage reported, assigned as a reason for the selection of the highway the fact that its schedules were more regular or dependable. These shippers represented practically every type of business, and were responsible for over 50 percent of the total highway tonnage of the paper shippers; 73 percent of the packing house product shippers; and 74 percent of the structural iron and steel shippers.*

About 12 1/2 percent of the total tonnage and about 26 percent of the highway tonnage was reported by shippers who assigned more convenient schedules as a contributing factor which influenced their choice of the highway. The proportion of the highway to total tonnage was much higher among this group than in the case of the average. For the group as a whole, 12 percent compared with the average of 6 percent; for fresh fruits and vegetables, 41 percent compared with the average of 20 percent; for cooperage material, 45 percent compared with the average of 19 percent; for groceries, 53 percent

* Analysis 30.1.



compared with the average of 23 percent; leather, 28 percent compared with 8 percent; dry goods, 54 percent compared with 23 percent; structural iron and steel, 37 percent compared with 2 percent; machinery, vehicles, etc., 13 percent compared with 4 percent; and plumbing supplies, 40 percent compared with 4 percent.*

## X ADAPTNESS

### 31. Nature of Demand for Adaptness

### 32. Present Adaptness

Shipper — The cost of packing, crating and otherwise preparing goods for rail shipment averages $1.71 per ton, or $50 per car. Wide variances are observable between the business groups, from 3 cents per ton in the case of coal and coke, to about $10 per ton in cases of fresh fruits and vegetables, packing house products, and machinery and vehicles.# Comparing the cost per ton of the six general business groups with the freight charges per ton of the corresponding commodity groups shown in analysis 49.1, we find that in the case of Rough Material, the cost is equal to 7 percent of the freight charges; Raw Material 27 percent; Semiprocessed Material 28 percent; Necessaries 49 percent; Auxiliaries 6 percent; and Accessories 19 percent.

The average cost of loading and unloading is 35 cents per ton or $10 per car. The bulk materials with the exception of petroleum cost between 6 1/2 and 10 1/2 cents per ton; petroleum 17 1/2 cents; vegetable oil, cake, etc., 16 1/2 cents; sugars and sirups, and bakery goods 12 cents; structural iron and steel 12 1/2 cents; and iron and steel articles 17 cents.#

In 4 business groups the cost is in excess of $1 per ton, horticultural material, packing house products, porcelain, china, etc., and machinery and vehicles. In 24 cases out of 43 the cost ranges between 25 cents and $1 and in 11 of these cases, above 50 cents per ton.#

The reductions possible through the use of mechanical loading and unloading devices can be shown partly by comparison of the loading and unloading costs, reported by shippers for commodities whose nature and the rail equipment furnished therefor permits this character of loading with those of

* Analysis 30.1.
\# Analysis 32.1.

commodities whose nature permits such loading but the rail equipment generally furnished does not. The reported costs of loading and unloading sand, stone and gravel, grain, coal, ores, chemicals, structural iron and steel, all of which are largely mechanically handled, run from 8 to 12 cents per ton. On the other hand, lumber costs 74 cents per ton; cotton 44 cents; paper 36 cents; and masonry materials 30 cents. All of these commodities permit mechanical handling. Many of these commodities can be and are mechanically loaded on water vehicles.*

Specific data were not gathered regarding shipper and carrier expense in protecting or paying for protection of freight against heat and cold.

Petroleum — The concentration of the crude petroleum production areas requires a transportation service which is closely adapted to the peculiarities of the traffic, with respect to plant capacity, continuity and dependability of service, gathering and storage facilities, and peculiarly constructed and highly specialized equipment. Gathering lines must be constructed and located so as to connect wells as they come into production with trunk lines and storage facilities at the junctions between the trunk and gathering lines. These terminal pipe lines must be laid so that they can be readily relocated when wells cease production to serve new wells as they come into bearing. The lines must be constructed of pipe adapted to the varying sulphur content of the petroleum so as to resist the destructive processes of the oil.

Storage tanks at originating concentration centers, at destination distribution centers and at intermediate points along the trunk pipe lines must be provided in which to accumulate the oil prior to movement, to store it awaiting delivery, and to equalize the flow in the trunk pipe lines.

Pumping stations must be provided at varying distances along the trunk lines, the spacing of the stations depending upon topography, the size of pipe and the capacity of pumps, in order to provide for the even and continuous movement of the oil.

Telephone and telegraph facilities must be provided in order to control the movement of the traffic and to afford shippers and consignees facilities for communicating orders concerning the movement and delivery of the oil. Inspection and reporting facilities must be provided to insure the prompt discovery and reporting of breaks and leaks in the lines which are not only costly in oil loss but dangerous fire hazards.

* Analysis 32.1.



Pipe lines of necessity are constructed exclusively for the transportation of crude petroleum, or gasoline, excepting those which are used for the transportation of natural gas. Rarely is one type of pipe line suitable for the transportation of more than one of these kinds of petroleum traffic, although it is possible by reconstruction and rearrangement of the facilities to adapt a line originally constructed for crude petroleum to the transportation of gasoline, and to transport different grades of refined petroleum over the same line in successive lots on the same line at the same time, one lot behind the other. This has been done in several notable instances and several grades or kinds of refined petroleum are transported through the same pipe lines at the same time.

The transportation by rail of crude petroleum and the great bulk of refined petroleum must be accomplished by the use of specially designed tank cars which ordinarily are not adapted to the transportation of any other traffic. A large number of special tank cars are owned by shippers who receive from the railways a mileage allowance for their use. From a transportation standpoint, the equipment is rarely used in more than one direction, resulting in a high ratio of empty to total car miles. A compilation of about 128 thousand tank cars taken from the Official Railway Equipment Register showed that railroad owned tank cars hold on an average approximately 217 barrels or 33.7 tons, while the average carrying capacity of privately owned tank cars is about 270 barrels or 42 tons, and the weighted average capacity of all tank cars in use in 1932 was about 266 barrels or about 41.4 tons. Because of the large units in which crude petroleum is sold, there has been a tendency in recent years to increase the capacity of the tank cars.

## 33. Potential Adaptness*

## 34. Effect of Adaptable Equipment

Shipper — About 13 percent of the total tonnage and 28 percent of the highway tonnage was reported by shippers who assigned more liberal packing requirements as a factor leading to the use of the highway. The percentage of highway patronage among these shippers was over half that of the average shipper. Significant businesses in which this consideration influenced more than the average tonnage to the highway were lumber, 30 percent; beverages and liquors, 35 percent; groceries, 56 percent; and iron and steel articles, 21 percent.#

* See sections 83 and 86 infra.
\# Analysis 34.1.

## XI ELEMENTS OF FREIGHT CHARGES

### 35. Determinative Factors in The Price System

Shipper — The shippers were asked to point out which of the following factors were of influence in determining the extent to which the highway rather than the railway was used: Lower minimum weights, more liberal commodity mixture, or lower charges. Shippers and receivers of 34 percent of the highway tonnage said the smaller weight requirements; 26 percent the more liberal commodity mixture; and 60 percent the lower charges.*

### 36. Reorganization

## XII FREIGHT TRAFFIC SALES UNIT

### 37. Sales Units Required

General — That the unit in which transportation is sold is a factor of great importance is evidenced by the fact that the shippers of over one third of the total highway tonnage found the rail unit unsuitable. # It is of primary economic importance that the units in which many commodities are purchased or sold, processed and transported have become much smaller in recent years. Scheduled and mass production, all-weather highways, a multitude of trucks of less cargo capacity than railway cars, increased speed of transportation, decentralization of industry, key-city distribution of products, small inventories, frequent purchases of fresh goods, "hand-to-mouth" buying all have brought about the necessity for transportation units of a size smaller than the present box car. The shipper constantly is seeking lower carload minimums for semiprocessed and processed products.

Considering basic raw materials we find the opposite tendency as to the size of transportation units. The development of large scale factory production, processing machinery of tremendous capacity, and economies inherent in handling large quantities of bulk material, all point toward transportation vehicles of large cargo capacity, with corresponding

* Analyses 40.1, 45.25, 50.1. # Analysis 40.1.





reduction in tare weight compared to lading, lower maintenance costs, reduced handling expenses, expedited and more economical movement. While the customer does not directly demand such cargo vehicles, it is significant that because of lower charges he tends to patronize carriers which provide them. In 1932, over 95 percent of crude petroleum and about 55 percent of refined petroleum moved by cargo carriers.*

### 38. Present Transportation Sales Units

General — The carriers' sales units are deficient in two important respects, physical equipment and adaptation to trade usages and requirements. Specifically, rail and water carriers fail to provide equipment for the present day smaller "quantity" shipments (as distinct from capacity carload shipments) while rail and highway carriers in general do not use vehicles of great capacity for the large scale movement of bulk commodities. All carriers which transport goods in accordance with published tariffs in general fail to follow the usual trade custom of quoting quantity discounts.

Shipper — Each of the shippers reported the number of consignments of 5 tons or more and the aggregate weight received or shipped by rail, water or highway in 1933, thereby making it possible to obtain average loads (per shipment) of each transport agency. Attention already has been drawn to the fact that the railway averages reported are practically identical with those of all rail traffic. Dealing with the outbound shipments we find that the average load of all traffic by water was 128 tons, by rail 29 tons, and by highway 6 tons. The average water shipment for businesses generally dealing in cargo loads were: Sand, stone and gravel, 1,800 tons; grain, 4,100 tons; ores, 230 tons; petroleum, 664 tons; metals, 100 to 200 tons. On inbound fuel, what appear to be cargo loads run as high as 7,000 tons.#

The rail average outbound load varies from 7 tons in the case of the dry goods business group to 53 tons in that of sand, stone and gravel. Inbound varies from 8 tons in the case of bale cotton to 49 tons of ores and concentrates.#

Of the outbound tonnage, 5 businesses had average loads by rail of over 7 and under 10 tons per car; live stock, 9 tons by rail and 3 by highway; furniture and furnishings, 8 tons by rail and not quite 5 by highway; textiles, 8 tons by rail and 5 1/2 tons by highway; and automotive vehicles and parts, 8 tons by rail and 5 by highway.

* Private and contract water carriers and pipe lines; analysis 7.6. # Analysis 38.1.

Six businesses shipped loads averaging between 10 and 15 tons each: Cooperage, 13 tons by rail and 3 by highway; packing house products, 13 and 6; shoes, 14 and 7; rubber tires, etc., 12 and 7; machinery, 12 and 5; and tobacco 14 tons by rail and 8 tons by highway.*

Seven businesses shipped loads averaging between 15 and 20 tons each: Fresh fruits and vegetables, 17 tons by rail and 6 1/2 by highway; beverages, 15 and 7 1/2 tons; bakeries, 19 and 6 1/2 tons; chinaware, 17 and 3 1/2 tons; leather, 17 and 7 tons; paints, 15 and 4 tons; books, etc., 15 and 7 tons, respectively, by rail and highway.*

Twelve business groups shipped loads averaging between 20 and 30 tons: Cotton, 22 tons by rail and 6 tons by highway; paper, 21 and 7 tons; horticultural material, 24 and 5 tons; sugar and sirups, 21 and 6 tons; vegetable oils, 24 and 6 tons; canned goods, 22 and 9 tons; groceries, 22 and 4 1/2 tons; cereals, 23 and 7 tons; department stores, 20 and 7 1/2 tons; lumber, 27 and 9 1/2 tons; petroleum, 29 and 10 1/2 tons; miscellaneous business, 27 and 3 1/2 tons, respectively, by rail and highway.*

The highway average load, with some notable exceptions, was fairly constant. Outbound shipments averaged 6 tons. There were 9 businesses in which the average load was less than 5 tons; 9 between 5 and 6 tons; 6 between 6 and 7 tons; 14 between 7 and 9 tons; 3 between 9 and 10 tons; and 1 over 10 tons. Inbound shipments averaged 5 tons. There were 12 businesses whose average load was less than 5; 9 between 5 and 6 tons; 8 between 6 and 7 tons; 5 between 7 and 8 tons; 6 between 8 and 9 tons; 1 between 9 and 10 tons; and 1 between 11 and 12 tons.*

The highway operator is much more favorably situated, the range of truck capacities paralleling quite closely the needs of shippers, except for the movement of low-valued bulk commodities in large quantities. A comparison of the average vehicle load reported by shippers via railway and highway indicates that in general the average load via highway is from 1/5 to 1/3 of the corresponding rail load. For all commodities, the average highway load is 21 percent of the rail load, while for each of the six principal groups the highway load is 12 percent for Rough Material; 16 percent for Raw Material; 33 percent for Semiprocessed Material; 31 percent for Necessaries; 18 percent for Auxiliaries; and 28 percent for Accessories, respectively, of the railway load. While the bulk or density of the commodity and the allowable length and weight restrictions imposed by highway

* Analysis 38.1.



authorities have some influence on the size of the highway load, nevertheless the variations in average highway loads as between specific commodities indicate that shippers' needs influence the size of load transported by trucks.*

Railway

In the case of several important commodities, chiefly among those which move in "open top" cars, the carload minimum is the capacity of the car. In practically all instances of box car shipments the minimum weight required is far below the capacity of the car. Since the average box car load in 1932 was about 50 percent of the volume or weight capacity,# the average minimum weight of necessity must have been considerably below that amount. The cubical and weight capacity of the average car has steadily increased through the years. Three decades ago the "standard" length of box cars was 36 feet, average capacity approximately 2,000 cubic feet and 60,000 pounds. Then came the 36-foot car of 2,500 cubic feet and 80,000 pounds capacity. The present standard box car has an inside length of 40 feet 6 inches with capacity of 3,311 cubic feet and load limit of 125,650 pounds. Similarly, the increase in size and capacity of gondola and hopper cars can be traced from 30 tons capacity to 50 tons and 70 tons, with more than 1,000 gondola and hopper cars of 90 tons or greater capacity in use today.

Not only is the idea of a standard carload illusory, but the payload that can be carried varies almost with every commodity. This, coupled with the fact that the capacity of the average car is increasing while the customer's requirements in the case of many commodities are in the opposite direction, leaves the rail carriers in a dilemma. To reduce the carload minimum load requirements to a weight sufficient to attract a substantially larger volume of traffic would not help, because each car would be underloaded, more cars would be required to handle the traffic, the cost per ton of transporting goods would rise, and consequently either freight rates or the carrier deficit would be increased.

In a recent study by the Official Classification Committee, it was found that in the total ratings, 6,244 in number, there were 28 minimum weight categories prescribed which varied from 5 to 32 1/4 tons. Of these ratings 29 percent were 15 tons; 24 percent 18 tons; 18 percent 12 tons; 7 percent 10 tons; 6 percent 20 tons; 4 percent 6 tons; 3 percent 5 tons; and 2 percent 8 tons; or 93 percent of the ratings in 8 of the 28 categories, all of which were 20 tons or less whereas the present standard box car has a weight capacity of over three times that amount.

* Analysis 38.1.

\# Analysis 90.3.

The rail carriers' cost varies with gross weight units, while its service must be priced in net weight units. The economy of its transport depends largely upon its ability to reduce the carriage of dead weight to a minimum. Hence the need for heavy loading of cars which is the occasion for the present system of carload minimum weight requirements.

The amount of freight which will be shipped in a car depends upon four factors: (1) The amount which the patron desires to ship; (2) the cubical capacity of the car; (3) the weight capacity of the car; and (4) the density (weight per cubic foot) of the commodity. It is to the interest of the carrier to secure the use of the maximum capacity in volume or weight, but frequently to the interest of the patron to use much less. The conflict of interest has been partially met by the prescription of minimum weights for which the shipper must pay.

Waterway

Present sales units of water carriers are of two types only, full cargo or part cargo lots handled on contract rates or by the owner in his own or leased vessels, and carlots which approximate in size the sales units of rail carriers, i.e., carload and less than carload lots.

Cargo lots usually of bulk commodities, handled by contract and private carriers, constituted about 60 percent of the tons reported. There were three districts in which the ton miles of contract and private carriers totaled one billion or more. Marked distinctions between the operations of common carriers, who handled principally carlot shipments, and cargo carriers were evident.*

In the Great Lakes district, cargo carriers handled 84 million tons for an average distance of 669 miles with an average load per vessel of 5,500 tons and created 15,900 million ton miles. Common carriers in this district handled 3 million tons for an average distance of 428 with an average load per vessel of 700 tons resulting in 1,300 million ton miles.*

On the Atlantic Coast, cargo carriers handled 3 1/3 million tons for an average distance of 646 miles with an average load per vessel of 4,000 tons which created 2,200 million ton miles, while common carriers in this district handled 4 2/3 million tons, an average of 425 miles with an average load per vessel of 350 tons, resulting in 2,000 million ton miles.*

* Analyses 70.2, 70.3.



In the Atlantic Gulf trade, cargo carriers handled 500 tons for an average distance of 1,901 miles with an average load per vessel of 6,000 tons which created 1,000 million ton miles, and common carriers in this service handled 2 million tons for an average distance of 1,900 miles with an average per vessel of 1,200 tons resulting in 3,390 million ton miles.*

On the Inland Waterways, cargo carriers reported 600 thousand tons which moved an average distance of 1,100 miles with an average of 2,600 tons per load resulting in 644 million ton miles, and common carriers handled 2 1/4 million tons an average distance of 1,033 miles with an average of 2,800 tons per load producing 2,368 million ton miles.*

Contract and private carrier operations in the Intercoastal trade and on the Pacific Coast were not reported in sufficient volume to warrant similar comparisons, but common carrier figures in the Intercoastal trade were 4 million tons handled an average distance of 5,840 miles with an average load per vessel of over 3,800 tons creating 22,880 million ton miles, and on the Pacific Coast common carriers handled 2 1/2 million tons an average distance of 371 miles with an average load of 300 tons per vessel producing a total of 960 million ton miles.*

Petroleum

Several factors contribute to the size of the transportation sales unit of petroleum traffic, particularly crude petroleum - first, the need for continuity of operation; second, the necessity of separating the runs of different shippers; and third, the desire of larger refineries owning the pipe lines to restrict the number of enterprises engaged in the business to a relatively few large concerns.

The average transportation sales unit or minimum tender requirement of pipe lines transporting crude petroleum, upon the weighted average for 59 representative crude petroleum minimum tender requirement, is 8,823 tons. The "minimum tender requirement", as these traffic sales units are called, vary from 1,000 barrels to 100,000 barrels. In order to avoid undue burden upon the smaller shippers, the minimum tender requirements of some pipe line companies are modified by legal restrictions or aggregation rules, by permitting lots from a number of consignors to be aggregated and stored at origin until the minimum tender requirement is reached and the aggregated lots are forwarded as one run to a single consignee. State laws also sometimes limit the minimum tender requirements.

The gasoline pipe line uniformly requires a minimum tender of 7,750 tons.#

* Analyses 70.2, 70.3.
Analysis 38.3.

Pipe line carriers are limited as to commodities transported, amount shipped, and form in which the commodity moves. Only liquid commodities in large quantities are acceptable, and to date each pipe line is used to transport a single product or closely related products. The large volume in which shipments move via pipe line are shown by the minimum tender requirements of all principal pipe carriers. The weighted average minimum tender of 8,823 tons for crude petroleum is equal to 238 railway tank cars of 10,000 gallons capacity each, while the highest minimum tender requirements of 15,500 tons is equivalent to 419 tank cars of 10,000 gallons capacity each. A minimum tender requirement of 7,750 tons of gasoline is equivalent to 254 tank cars each of 10,000 gallons capacity. Incidentally, such business could be handled by railways at much less than the present average per car cost if it moved in solid train load lots and in cars of a capacity of 20,000 gallons or more, as will be hereinafter shown.*

## 39. Modern Sales Unit

General

The sales unit which will meet the requirements of the modern day, both from the viewpoint of shippers and carriers, requires a transportation vehicle having the maximum volume and weight capacity which can be economically and expeditiously transported by railway, highway and waterway interchangeably, and at the same time not exceed the lading capacity desired by the majority of shippers.

In the discussion of vehicles, section 82 et seq., it is shown that, having due regard to the density of the materials, an efficient equipment unit for coordinated transportation service is a container having a capacity of approximately 500 cubic feet and 25,000 pounds, dimensions 8 feet wide, 8 feet high and 10 feet long, designed to carry bulk, packaged and perishable commodities. Such a unit can be moved on highways of any State, though with 25,000 pounds payload in only 25 States. The average load per container would be about 9 tons which could be legally trucked in 38 States. By rail, five containers can be carried on a flat car of the same length as the present standard box car, producing a payload considerably greater than the present average carload shipment.

That such a unit would meet the needs of shippers is obvious. The cubical capacity of the container is approximately one fourth less than that of the ordinary truck body which carries general merchandise. At the same time the

* Analysis 38.3, sections 82 and 113.



container has a cubical capacity approximately one fifth of the average box car. This permits the movement of commodities in quantities adjusted to the demands of all shippers but at no increase in the cost per ton for transportation agencies.

Such a sales unit opens a large field for increased transportation of present carload commodities as well as for promoting the shipment of goods which now cannot be profitably marketed due to carload minimum weight requirements. For example, perishable fruits, vegetables, fresh meats, etc., would move directly to small communities in part carload containers where at present there is little movement, owing to inability to consume a full carload.

When a unit more closely approximating today's business requirements and one which can be used interchangeably by rail, water and highway carriers has been adopted, business should not be fettered by any fixed minimum weight, but should be permitted to move any amount within the capacity of the equipment, the price being varied in accordance with the total weight, net and tare, which the size of the shipment requires.

There remains the matter of providing proper sales units for larger than single carload shipments. This demand can be partially met by providing cars of greater capacity, for handling materials such as coal, ores, crushed stone, other minerals, grain, perishables, lumber, crude oil, gasoline and other petroleum and liquid products. The shipper is not particularly interested in the size of the container in which shipments are made, but the carrier can realize decided economies by using cars of, say twice the present average carload capacity. An open-top, hopper-bottom car of 100 tons load limit is recommended for the movement of dry bulk materials and a 20,000 gallon tank car, 80 tons load limit, for liquid commodities. Such cars can be built which require only four-wheel trucks, readily negotiate all curves ordinarily encountered, "train" well with other cars, and do not require special maintenance equipment.*

The railway should follow the lead of the water and pipe carriers in providing cargo rates. The shippers report cargo loads by water which average for the year as high as 5,000 tons. The average pipe line cargo unit is about 8,000 tons. The question arises as to whether or not the railway should be permitted to make cargo rates in view of early decisions of

* See section 82 for description of large capacity tank cars.

the Commission to the contrary, which are cited in the note.* The principle of these decisions does not apply to modern conditions. In a later connection it will be shown that yard expenses constitute over half the total railway cost. These expenses arise largely, if not entirely, because of collection, assemblage and delivery of carlots. In a train load operation from origin to destination track they can be practically eliminated. Further, the average train of carlots is less than 30 cars.# Requirement of a minimum cargo of 5,000 to 10,000 tons in loads of 80 tons per car will enable the operation of fully-loaded trains. The cost of such operation would be markedly less than the cost of carlot train operation. The fear that the "little man" would suffer under such an arrangement is not well taken. All that he has open now are the relatively high carlot rates of the railway while his strong competitor has provided himself with miles of pipe lines or fleets of vessels. If his condition were changed at all it would be for the better, to the extent that alone or in cooperation with others he could take advantage of such rates.

The practice has had exactly the reverse effect in the transportation of petroleum traffic. By handling the traffic in carload units rather than train load units, the rail carrier has been subjected to large additional terminal costs which would not be encountered in cargo transportation and for that reason is compelled to charge rates based upon such costs and much higher than necessary if it were permitted to handle the traffic in train load lots from origin to destination without intermediate or terminal switching. The result has been that the large shippers have found it possible greatly to reduce cost of transportation through the utilization of proprietary or closely affiliated facilities - the pipe lines and marine tankers - thereby obtaining a decided

* Paine Bros. & Co. v. Lehigh Valley R.R. Co., 7, I.C.C. 218 (1897); Woodward-Bennet Co. v. San Pedro, L.A. & C.L. R.R. Co., 29, I.C.C. 664 (1914); and Miller & Lux, Inc. v. Southern Pacific Co., 41, I.C.C. 617 (1916) are the only cases in which the issue of multiple carload rates was raised, and in each, were condemned as discriminatory. The same conclusion has been intimated in dicta and statements arguendo of many other decisions, but the only case of this sort since 1920 was in Kingan & Co. v. Director General, 89, I.C.C. 550 (1924). On the other hand since the Transportation Act of 1920, in several cases involving reasonable carload rates the Commission has considered the fact that the traffic moved in train load lots such as "Petroleum From Arkansas", 104, I.C.C., 651 (1925).

\# Average all trains, 26 loaded cars (analysis 109.1); manifest through trains, 48 loaded cars and drag trains, 32 loaded cars (analysis 109.2)



advantage over small shippers who cannot afford to acquire these facilities and compelling such a shipper to use the facilities of his competitors at charges which, while in excess of the actual cost to the competitor, are still substantially lower than the charges applicable via rail. The failure to provide cargo rates on petroleum has discriminated against the small shipper and is not an inconsequential factor in the concentration of the petroleum industry in the hands of a relatively few concerns.

## 40. Effect of Modern Sales Unit

General

About 13 percent of the total tonnage and 34 percent of highway tonnage were reported by shippers who used the highway in part because lower minimum weights were available by that agency. This cause, as was to be expected, was relatively unimportant among the Rough and Raw Material groups, in which case the tonnage of the shippers who assigned this as a motivating reason for the use of the highway constituted less than 10 percent of total highway tonnage reported by shippers. It was otherwise in the Necessaries group where the responding shippers of that group reported that 50 percent of the tonnage moving by highway used that agency because of lower minimum weights available, and in the Auxiliaries group where they so reported 42 percent of the total. If the same ratio obtains among all shippers there would appear to be over 75 million tons of freight per year which are diverted to the highway upon this account.*

The situation with respect to the cargo shipments can be approximated only in the most general terms. The tonnage of petroleum and its products is second only to coal in volume of total tonnage produced. In 1932, the total crude petroleum produced was 122 million tons, of which the rails handled 3 million, the trunk pipe lines 83 million, and the waterways 29 million tons. Of the 119 million tons of petroleum products produced, the railways handled 47 million, trunk pipe lines 3 million and waterways 53 million tons.#

* Analysis 40.1. # Analysis 7.6.

## XIII FREIGHT COMMODITY CLASSIFICATION

### 41. Purpose of Freight Commodity Classifications

Railway — There are over 5 thousand individually named commodities which are given carload rating in Consolidated Freight Classification No. 9. The necessity for classification or the grouping of commodities for ratemaking purposes arises out of the fact that it is indispensable if any differentiation in charges other than for weight, bulk and distance is to be made. That such a differentiation is necessary is quite clear. Measured in gross ton miles (of loaded vehicles only) unprocessed material constituted about 62 percent of the 1932 rail tonnage. The freight charges upon these commodities were relatively lower than the freight charges upon the processed material and even under those circumstances such charges in some cases equaled or exceeded the value of the commodity at origin.* The unit cost of transportation is determined by the quotient obtained by dividing expenditures by the number of units and hence, within limits, depends on volume. If the volume of these unprocessed materials were reduced by rates which discouraged their movement, the cost of moving the processed materials would eventually necessitate higher charges for the latter. To the extent that the increased volume of raw materials, encouraged by the relatively lower rates, results in a lower average cost thereby making possible lower rates on manufactured goods, the practice of charging different rates for the same service is justified. This practice is termed the application of "value of the service" principle.

The need to adjust rates for the purpose of encouraging the maximum volume of profitable traffic is vital. The degree of success with which the problem is solved may in large measure determine the profitability of the enterprise. The very importance of such an adjustment demands that the principles which underlie it be stated and applied openly in relation to actual needs.

Clear and definite rules of classification for this purpose are impossible so long as the endeavor is to integrate, with this value element, cost elements peculiar to each commodity, such as density, risk, and special service. It is possible to state definitely the principles and processes which should be used in classifying commodities in accordance with value. It is equally possible to define clearly the principles which should be controlling in relating rates to costs. The difficulty comes in attempting to apply these differing principles under all manner of variable conditions at one and the same time and in a single process.

* Measured by line cost per gross ton mile of loaded movement. Analysis 45.17 et seq.



Since this is where the difficulty lies, the first question which arises is whether or not such an integration is in fact necessary. Examination will reveal that the results desired can be attained much more readily and with greater certainty in two steps or processes rather than one.

### 42. Density Not a Proper Element of Classification

### 43. Risk Not a Proper Element of Classification

Railway — The factor of risk rarely is included as a separable or distinguishable element in classification, although it has great if not determinative influence. It is a factor, however, which is capable of accurate appraisal. The railways annually report to their national association the amount of their loss and damage payments. Such reports show that for the year 1932 these payments (for carload shipments)* aggregated about 14 1/2 million dollars which is about 0.6 percent of the revenue. This ratio varies among commodity groups from a low of 0.04 percent of the revenue of petroleum and its products to a high of 3 1/4 percent of the revenue of perishables. It is in excess of 1 percent in only 4 out of 24 commodity groups, the 3 groups, in addition to perishables, being live animals, 1 1/4 percent, appliances, machinery and vehicles 1 1/2 percent, and glass and tile 2 1/2 percent. A more accurate relationship is that to value of the commodity hauled. This ratio varies from a high of almost 2 percent in the case of perishables to a low of 0.004 percent in the case of cotton, hay and tobacco.#

Waterway — One of the most important factors on which rail classifications are based, namely, that of value, is generally eliminated by water carriers, by not providing insured transportation, except as to negligence. The owner, in most cases, must arrange for insurance or assume the liability of intransit hazards.

### 44. Special Service Not a Proper Element of Classification

### 45. Present Classifications

Shipper — Thirteen percent of the total tonnage and 26 percent of the highway tonnage were reported by shippers who listed the more liberal commodity mixtures available by highway as one factor in their

* L.c.l. payments were 1.6 percent of the revenue, exhibit 241-2, Merchandise Traffic Report. # Analysis 43.1.

selection of that medium. The business groups in which the factor appears of more than average importance are: Cotton; beverage; vegetable oils, meal and cake; groceries; masonry materials, automotive groups and miscellaneous businesses.*

To further determine the customer's attitude with respect to carload mixture requirements, an inquiry was addressed to several thousand shippers throughout the United States. The list included producers, distributors, wholesalers, brokers, retailers, chain stores, mail order houses, public utilities, etc., and ranged all the way from the occasional carload shipper to large concerns shipping a number of carloads daily. Each shipper was asked to list the principal commodities which he shipped outbound in carload lots, and to group those commodities which the commercial needs of his firm required should be consolidated and shipped in a single mixed carload. Some 6,200 replies were received, of which 4,100 reported outbound carload shipments. Of these 4,100 shippers, approximately 2,150 or 52 percent stated that no carload mixtures were necessary. Of the remainder, an analysis of shipper requirements based on the commodity groups listed in analysis 3.3 showed that 58 percent of mixture requirements fall in a single statistical commodity group, such as "grain" or "manufactured foods", while 74 percent of all mixtures are included in a single rating group such as "Raw Materials" or "Necessaries". Likewise, 13 percent of mixture requirements require two rating groups, 7 percent require three rating groups, and the remaining 6 percent require four or five rating groups.

Railway

Broadly speaking there are two kinds of rail classifications now in use, the rate classification and the statistical classification. There are three interstate rate classifications respectively applying in the three Districts - East, South and West. These three classifications have been consolidated in a single volume and under a single commodity list. Varying rules determine the classification which will apply in the case of interterritorial movements. In this consolidated classification there are listed 5,300 carload commodities which are given one or more ratings in each of the three classifications.

Definite and logical rules for the classification of commodities have never been established by the classification committees, the procedure being for each committee independently to assign each commodity to a "class", specifying the minimum weight of the commodity which will be accepted as a carload shipment and stating in detail the type of package in which the commodity may be shipped. Each interested shipper may confer with the committee regarding the regulations imposed on the commodity in which he is interested, which in due course may be modified.

* Analysis 45.25.



In addition to the rail carriers' classifications developed for rating purposes, the Interstate Commerce Commission for years has required the rail carriers to supply data showing currently the number of carloads and tons of freight originated, terminated, and handled, segregated by specific commodities and commodity groups. Prior to 1928 there were 68 groups of carload commodities, which were then expanded to 156 groups, for which the carriers report total revenue in addition to tons and cars.

The Commission's statistical classification divides all commodities into five groups, namely: Products of Agriculture, Animals and Products, Products of Mines, Products of Forests, Manufactures and Miscellaneous. The first main group embraces 23 individual commodities, 7 groups of two commodities each, and 12 groups of more than two commodities; the second primary group lists 11 individual commodities, 5 groups of two commodities each, and 6 groups of more than two commodities; the third shows 12 individual commodities, 1 group of two commodities, and 5 groups of more than two commodities; the fourth names 7 individual commodities, 1 group of two commodities, and 4 groups of more than two commodities; and the fifth primary group includes 24 individual commodities, 14 groups of two commodities each, and 24 groups of more than two commodities. The last group, No. 701 "Manufactures and Miscellaneous N.O.S." includes more than 1,200 commodities varying from art glass to locomotive arch-bars, baking powder to copper slag, and ice cream to burial cases.

In this classification a number of important commodities such as some non-ferrous metals, house furnishings, some textiles, clothing, and chemicals, are not segregated, while others of slight importance are listed individually. Of the 77 individually named commodities, 50 produced less than 1/4 of 1 percent each of the total tons originated in 1933.

Nearly 40 percent of rail carload freight revenues accrue on shipments which move between two classification territories. This means that for over one third the business, the classification of one territory must be projected into another. To appraise the results of the several classifications individually, therefore, is likely to prove misleading. Taking the country as a whole, an attempt has been made to evaluate the results of the classifications including, of course, "exceptions", "commodity rates" and other departures therefrom. Since analysis with respect to traffic volume, revenues, average load and average haul was limited to the 156 commodities of the Commission's classification, the 5,300 commodities listed in the consolidated rate classification were first distributed among these 156 statistical commodities. For each of the rate commodities, the density, value, where possible the average, and physical maximum load were obtained, and entire information

summarized for each of the statistical commodities. These 156 groups were next reduced to 53 primary groups, cognate from the commercial and utility standpoint. These primary groups then were arranged into 6 general divisions or groups in accordance with their stage of processing applicable to the commodities within the primary group, namely: (1) Rough Material; (2) Raw Material; (3) Semiprocessed Material; (4) Necessaries; (5) Auxiliaries; and (6) Accessories.*

In connection with the traffic analysis of the survey, it was possible to obtain the average load, haul, and revenue per net ton of each of the 156 statistical commodities and by correlation, the 53 groups. The terminal revenue per ton, which was assumed to be the quotient obtained by dividing twice the average cost of originating and terminating a carload of traffic by the average ratio of freight cost to freight revenue, was deducted from the total revenue per ton to obtain the line-haul revenue. To equate the differences in average load per car, it was necessary to adopt as a common denominator in which to express the line-haul cost per mile a unit, called "equated ton-mile," which is the movement of the gross weight of the loaded car and contents one mile. The result reveals the amount which the carriers received for the transportation effort of the loaded haul necessary in the case of each group.

The results of the foregoing study are shown in analyses 45.17 to 45.22, inclusive, and similar studies with respect to each classification territory, in analyses 45.23 and 45.24.

The line revenue per equated ton mile of Rough Material averages 1.9 mills; of Raw Material, 3.7 mills; of Semiprocessed Material, 4.3 mills; of Necessaries, 4.3 mills;# of Auxiliaries, 5.5 mills; and of Accessories, 6.2 mills.

Line revenues per equated ton mile of all commodities are 4.15 mills for the country as a whole; 4.5 mills in the East; 3.4 mills in Pocahontas; 4.1 mills in the South; and 3.9 mills in the West. The Eastern District revenues are the highest of all territories in the case of Rough, Raw and Semiprocessed Materials; those of the South in the case of Necessaries and Auxiliaries; those of the West only in the case of Accessories. Pocahontas revenues per equated ton mile are lowest of all

* The reconciliation of this classification with the Commission's statistical classification is shown in analysis 1.10. Allocation of specific commodities to the 53 primary groups appears in the Appendix.

\# If group 44, processed cereals, be transferred and included with grain as appears proper in view of present transit adjustment, the average of Necessaries rises to 4.8 mills.



territories in the case of coal and other Raw Material, Necessaries, and Auxiliaries. Southern revenues are relatively the lowest in the case of Semiprocessed Material and Western revenues in the case of Rough Material.*

Waterway — In spite of certain basic differences in water and rail transportation, water common carriers, as a rule, have adopted the classification of rail carriers, but have modified it to fit the needs of water-borne traffic for port-to-port business. Contract carriers moving bulk commodities rarely use any classification.

## 46. Suggested Classification

General — The following illustrates the method of determining ratings of the primary commodity groups. Assume that an average rate for the average haul in the United States of 6 1/4 mills per equated ton mile (car and contents) is necessary to produce a fair profit upon the available traffic. Assume also that the out-of-pocket cost ratio is 50 percent (3 1/8 mills) and the cost of performing the service by owner truck 12 1/2 mills per equated ton mile. Assume further that Rough Material constitutes 5 percent of the available equated ton mileage; Raw Material, 60 percent; Semiprocessed Material, 5 percent; Necessaries, 5 percent; Auxiliaries, 15 percent; and Accessories, 10 percent. One system of rating which would produce the average rate for the average haul of all traffic would be ratings bearing the following "percentage relations" to the average cost: Rough Material 60 percent (3 3/4 mills); Raw Material 80 percent (5 mills); Semiprocessed Material 90 percent (5 5/8 mills); Necessaries 100 percent (6 1/4 mills); Auxiliaries 150 percent (9 3/8 mills); and Accessories 180 percent (11 1/4 mills). These rates multiplied by the respective equated ton mileage will produce the average 6 1/4 mills and at the same time are within the minimum and maximum limits. Other combinations, of course, are possible.

The range in the above ratings may appear comparatively narrow. It is not materially different, however, from that of the present equated ton mile line revenues,# where the lowest was 1 mill on pulpwood and the highest 8 mills on slab aluminum and tobacco - a range (using the average 4 mills as a base, 100) of from 25 to 200 percent. If the three commodities mentioned are omitted, the general range is from 2 to 6 3/4 mills or 50 percent to 170 percent.ø

* Analysis 45.23.

\# Analyses 45.17 et seq.

ø Sugar beets and ice which show practically no line revenue, and explosives which yield exceptionally high revenue due to their dangerous nature, are not considered in this discussion.

The question of district or territorial classifications has assumed a major importance in the past which does not appear to be warranted by the facts developed in the survey. From these facts it appears that (1) 40 percent of the revenue is derived from cars moving from one classification district to another; and (2) with several important exceptions, there does not appear to be much difference in the revenue results of the three classifications.*

The argument for different classifications, however necessary, is predicated upon the assumption that commodity distributions among the three districts vary widely. It should be premised that in the system of classification under discussion, questions of loading, haul, risk, as well as level of the rate themselves, all are eliminated. "Value of the service" being the sole criterion, a difference in ratings will be justified only if there is a difference in the distribution of traffic which is likely to make necessary a different relationship in the ratings, since any difference in rate levels can be adjusted in the rate system itself.

There is not the difference in the distribution of traffic which quite generally is assumed to exist. Because of the peculiar conditions in Pocahontas Territory, traffic of carriers therein is shown separately.# Dealing first with the revenues of the six commodity groups, it is seen that Rough Material contributes 2 percent of the revenue in the East, 1 percent in Pocahontas, and 4 percent in the South and West; Raw Material produces 51 percent in the East, 52 percent in the South, 49 percent in the West, and 84 percent in Pocahontas; Semiprocessed Material produces 5 percent in the East and West, 6 percent in the South, and 2 percent in Pocahontas; Necessaries produce 13 percent in the East and South, 14 percent in the West, and 4 percent in Pocahontas; Auxiliaries produce 21 percent in the South, 22 percent in the East, 23 percent in the West, and 7 percent in Pocahontas; Accessories produce

* Using the United States average as a base 100 percent, the average line revenues from all commodities in 1932 were: East 108 percent, South 99 percent, West 95 percent, Pocahontas 82 percent. Of Raw Material: East 109 percent, South and West 96 percent, Pocahontas 88 percent. Semiprocessed Material: East 111 percent, South 88 percent, West 92 percent, Pocahontas 97 percent; Necessaries: East 104 percent, South 110 percent, Pocahontas 99 percent, West 93 percent. Auxiliaries: East 102 percent, South 111 percent, Pocahontas 96 percent, West 94 percent. Accessories: East 94 percent, South 107 percent, Pocahontas 97 percent, West 110 percent. Analysis 45.23.

\# Analysis 45.24.



8 percent in the East, 4 percent in the South, 5 percent in the West, and 2 percent in Pocahontas. With the exception only of Pocahontas and owing to conditions which would not be affected in any material degree by classification, the distribution of the revenues of traffic is almost identical in the three districts. Almost exactly the same conditions exist with respect to the distribution of net ton miles of traffic.

In view of the foregoing facts and the further fact that about 40 percent of the total revenue is derived from interdistrict traffic, there would appear to be no need to continue three separate rating systems unless as we shall presently inquire, there are cost considerations which require it.

The process of changing the classification should be an orderly one. The first and most important step is an objective classification of commodities, first, into primary groups of similar nature and utility; and then in the general "rating groups" which at the beginning probably should number many more than eventually will be found necessary over a period of years. As shown by analysis of 1932 revenues there are a large number of commodities which could be readily aggregated into homogeneous groups without disturbing present relative levels. The others should be treated initially as exceptions to the rating and changed gradually as the occasion or demand therefor arises.

## XIV PRICE LEVEL

47. Definition of Price Levels

48. Carrier Price Levels

49. Commodity Price Levels

Shipper

Data furnished by shippers with respect to typical movements by rail and highway, respectively, made it possible to compare the average level of charges paid by the two transport agencies. The comparisons furnished by the shippers were individual averages with no indication of volume moving by either agency. In summarizing, therefore, simple and not weighted averages of charges per ton were all that were available. The average charges per ton and per ton mile are higher in many cases than those which actually apply. The averages may not be indicative of the present levels as such, but since they are strictly comparable in all respects, they are indicative of the relative charges of the two agencies, provided of course that the data furnished by the shippers is fairly typical. The data has been classified by commodities, by length of haul, and by size of load.

The average haul of all commodities was 221 miles; the average highway charge per ton $6.56; and the rail, $7.89. The transport charges per ton mile were highway 3 cents; rail 3.6 cents; and if drayage, packing, etc., be included, 3 1/2 cents and 4 2/5 cents respectively.*

There are 3 business groups in which the rail transport charges were lower than the highway (sand, stone and gravel; coal and coke; furniture and furnishings) in 1 (sugar, sirup, etc.) the charges were the same, but in the remaining 39 groups the highway was lower. In every case the total charge (including packing and drayage) was higher by rail. An illustration of the effect of these factors appears in the furniture group where the transportation charge by highway was 5 cents per ton mile; by rail, 4 cents per ton mile; whereas the total charge per ton mile was 6 cents by highway and 8 cents by rail.*

Railway

The revenue per net ton mile of the several commodities by districts is shown in analysis 43.8. From this analysis it is apparent that with respect to the commodity earnings there is little difference if the Pocahontas Carriers be excluded. In the Rough Material group the earnings of the three districts (excluding Pocahontas) are closely similar. In the Raw Material group (average about 9 mills) the same situation appears except that grain, fresh vegetables and dry fuels are higher in the West, and lumber and crude liquids (chiefly crude petroleum) lower. In the Semiprocessed Material (average about 12 mills) there are no wide disparities. Among the Necessaries (average about 13 mills) the earnings are also quite similar - the South being uniformly slightly higher and the West slightly lower than the East. Among the Auxiliaries (average about 14 mills) the chief disparity lies in gasoline where the average in the West is 13 mills, in the East 19 mills and in the South 19 1/2 mills. With respect to the Accessories (average about 17 mills) the East is about 10 percent less than the South and West - the East maintaining higher rates on the metals but lower rates on machinery, vehicles and the like.

Waterway

The average water common carrier ton-mile revenue (using equivalent rail haul to measure the miles) in 1932 was 5.6 mills.# Separated by carrier groups, the Atlantic Coastwise Operators received 14 mills;

* Analysis 49.1.

\# To compare the relative amount which the shipper pays for the two services it was necessary to reduce the water service to the same denominator as the rail - that is the water aggregate charges were divided by the number of ton miles which would have been necessary if the shipments had moved by the direct rail routes. Analysis 49.4.



the Atlantic Gulf Operators 4.9 mills; the Intercoastal Carriers 3.9 mills; the Inland Waterways 5.8 mills; the Great Lake Carriers 6.5 mills; and the Pacific Coastwise Carriers 9.2 mills.* It was not feasible to analyze these earnings by commodities.

Petroleum

The average pipe line revenue per ton mile of crude petroleum was 6.6 mills and for gasoline 11 mills.* One of the distinguishing characteristics of petroleum traffic is that the bulk of the transportation service is performed by the owner of the commodity either directly or through subsidiary pipe lines, or by subsidiary carriers or contract carrier steamship facilities. Only in the case of gathering pipe lines is there a substantial volume of traffic transported for persons other than the owners of the carrier facilities.

From a tonnage standpoint, the companies serving only proprietary refineries handled 8 1/2 percent of the total crude petroleum traffic handled by pipe lines; while the pipe lines serving non-proprietary refineries as well as proprietary refineries transported 75 percent of the total traffic of which 78 percent was proprietary traffic.#

Any carrier seeking to engage in the transportation of crude petroleum traffic must be prepared to offer a service at a charge which is comparable with the cost to the owner of transporting the traffic either by its own pipe lines or marine tankers, or by those operated by closely integrated subsidiary carriers.

The average cost of transportation by pipe line is far below the level of charges of railway carriers.ø The result has been to concentrate not only the refining of petroleum and the distribution of refined petroleum products, but also the control of the production itself into relatively few hands, since the capital outlay required to construct extensive trunk pipe line facilities or provide marine tankers is inexpedient in most cases unless the pipe line is assured of large and steady flow of traffic by close affiliation with the companies owning the petroleum, usually the refining companies.

Crude petroleum in 1932 produced for the railroads revenue of 8 mills per net ton mile and refined petroleum 15 mills per net ton mile./ The average net ton-mile earnings of all rail traffic in 1932 was 10 1/2 mills.*

* Analysis 49.4. # Analysis 49.20.

ø See analyses 75.1, 45.18, 45.21.

/ Analyses 45.18 and 45.21 (Revenue per net ton divided by average haul).

The lowest rate of earnings came from coal and coke for which average rates were about 7 mills per ton mile, and ores which were about 8 mills.* Crude petroleum with an average value of approximately $6 per ton paid 3 1/4 mills per equated ton mile, almost the same as the rate of bituminous coal at a very much lower value per ton.* Refined petroleum, however, with a value of $27 per ton produced rail revenue, exclusive of terminal revenue, of 6 1/4 mills per equated ton mile, which was relatively higher than most other commodities embraced within the same character of traffic.# The published rates of railways for the transportation of crude petroleum are relatively much higher than the published rates of petroleum pipe lines. Analysis of the rates applicable to a large number of competitive movements, embracing many important movements of crude petroleum, shows that the rail rates are a little more than twice the average pipe line rate. Generally slight attempt has been made by railways to meet the pipe line rates on crude petroleum, although there are noteworthy exceptions to this statement. Railways ordinarily transport crude petroleum from newly opened fields and expect the traffic to be taken away from them by the construction of pipe lines. In view of the fact that the average earnings of the present crude petroleum rail rates produce less than the average of all traffic and that the earnings which would be earned if the rates were reduced to the pipe line level would be less than that upon any other traffic handled, it would appear that the action of the railways in surrendering the crude petroleum traffic to the pipe lines is justified, unless the cargo practices and rates are substituted for the present carlot methods and rates.

The situation with respect to rates on gasoline and refined petroleum oils is quite different. For many years the railways have enjoyed a substantial volume of gasoline traffic although, as stated in an earlier connection, the volume handled by them is considerably less than that handled by water. This traffic by rail is rapidly becoming more vulnerable, due to several important developments in the industry - first, the location of refineries in centers of distribution and their connection with the fields by pipe line have reduced the length of haul of the refined product; second, the development of the movement of gasoline by tank motor trucks, which already has been mentioned, has contributed to the diminution of the traffic; and third, the development of the inland waterways has diverted additional traffic from rail carriers; and finally, the latest condition, and one which is the most serious menace from the railways' standpoint, is the construction of gasoline pipe lines and the adaption of several crude oil pipe lines for use as gasoline pipe lines. The largest gasoline pipe lines have been constructed from the Midcontinent

* Analysis 45.18.

\# Analysis 45.21.



field to tank farms located in the Central West and also from refineries at certain Atlantic Coast ports to interior distributing points. The rates which apply via the gasoline pipe lines from the Midcontinent district are approximately the same as rail rates. This does not state the entire fact, however, because the bulk of the gasoline handled by these lines is transported for proprietary refining companies, and the true measure is not the published rate, but the cost of transporting the gasoline. In the East, gasoline rates from the Seaboard refineries to interior distributing centers are less than half the comparable rail rates.

## 50. Effect of Present Price Level

Shipper

The shippers and receivers of 25 percent of the total tonnage and 62 percent of the tonnage moving by highway reported that the lower price of highway transportation was a determinative influence in its selection in preference to rail transport. Of the total tonnage, shippers assigning price as a determinative factor shipped or received 93 percent of the tonnage of packing houses; 86 percent of the bakeries; 69 percent of automotive businesses; 58 percent of paper businesses; 52 percent of non-ferrous metal industry; 49 percent of beverages and liquors; 44 percent of cotton industry; 41 percent of books and periodicals tonnage; 39 percent of that of groceries; 35 percent of canned goods; and 33 percent of each of the petroleum and iron and steel articles industries. These shippers also reported that 14 percent of their tonnage moved by truck. Conspicuous illustrations were: Beverages, 48 percent; canned goods, 22 percent; groceries, 38 percent; textiles, 15 percent; and miscellaneous businesses, 20 percent.*

## 51. Modern Price Level

Railway

The following illustrates the method of determining the carrier level for the United States as a whole. Assume that the total operating costs (including rents, taxes, and all freight expenses) for a typical period, average 3 1/4 billion dollars, that the amount necessary adequately to service capital employed in freight service is 1 billion dollars, which means that the revenues needed are 4 1/4 billion dollars (the operative cost ratio about 75 percent), and equated ton miles are 800 billion; in the case assumed, the rate level per equated ton mile would be 5 1/3 mills.# This

* Analysis 50.1.

\# Under the illustration used, if the passenger deficit in operations and capital service be included, the cost would rise to about 6 mills.

represents the average revenue per equated ton mile which all the traffic must produce to provide a profitable transport system under the conditions assumed. It is now ready to be apportioned among the several rating groups in the manner described in section 46.

## XV PRICE STRUCTURE

### 52. Definition of Price Structure

### 53. Carrier Price Structures

Railway

There is quite a widespread belief that marked differences exist in the carrier rate levels of the four principal carrier groups. The facts developed fail to warrant any such conclusion. Eliminating from consideration the Pocahontas group of carriers, the revenues per net ton mile are, as have already been shown, East 10 6/10 mills, South 10 6/10 mills and West 11 3/10 mills.* Expressing the relationship of the carriers to the group which has the lowest revenue per net ton mile, we have: The South 100 percent; East 100 percent; and West 107 percent; a maximum difference of 7 percent.

### 54. Commodity Structures

### 55. Effect of Present Price Structures

General

From a practical standpoint, the extent to which an unplanned and unscientific price scale is driving from the rails to the highways traffic which from a cost standpoint can be more advantageously handled by the railway is shown in analyses 49.7 to 49.14, inclusive.

### 56. A Modern Rate Structure

General

The common assumption that transportation costs cannot be ascertained with sufficient accuracy to permit cost pricing is due to two things - the indisputable fact that the operations, particularly those of railways, are primarily joint and require elaborate separation to ascertain the costs of particular services, and second, the fact that progress in carrier accounting heretofore has been along function rather than location and service principles. At a later stage of the report,# questions dealing with

* Analysis 45.24.
\# Section 67.



modifications of the accounting and statistical systems necessary to produce reasonably accurate transportation unit costs will be discussed. All that is necessary at this time is to point out that such costs may be made available with but slight changes in present statistical procedure.

The effect of the characteristics of weight and distance jointly on line costs is measured by the gross ton miles required for the movement of the shipment. Superficially, it would seem necessary to base their equation upon a sum which includes the gross ton miles of any empty haul incident to the loaded movement. Carried to its logical conclusion, however, this would mean that the cost of hauling a shipment would depend on a factor with which its characteristics have nothing to do - to wit, the place where the return load, if any, is found. It is reasonably safe to prophesy that a tank car will have a 100 percent empty return haul. From the reasonable certainty of this conclusion, one passes through constantly lessening degrees of certainty with respect to hoppers, gondolas, livestock, refrigerators, flat and box cars, at which point complete uncertainty is reached. The ratio of loaded to empty cars in each of these classes not only may vary in different parts of a haul covered by a single through route, but it is also difficult to assign commodities definitely and positively to particular types of equipment. Further, an appreciable part of the empty mileage is the result of the present system of car ownership by individual railroads and could be eliminated by the establishment of a pool.

On the whole, therefore, with the possible exception of cars definitely assigned to a particular traffic such as tank cars, the fairest rule would appear to be to let the empty mileage follow the loaded mileage by using as the cost unit "equated ton miles", as herein defined, i.e., the gross ton miles of the loaded car and its contents.

The effect on the terminal costs of these characteristics are limited to weight, the distance moved within the terminal being one of relatively minor importance, and the cost for a shorter distance through a congested area frequently exceeding that of a longer distance through an area of little traffic.

This leads to the adoption of the "equated ton" as the terminal cost unit and the "equated ton mile" as the line cost unit. Translation of these operative cost units into rate factors is accomplished through expansion by an operative cost ratio sufficient to make the carrier operations profitable as a whole. These rate factors represent the base or carrier levels. They are converted into commodity rate factors by applying to them the percentage rating factors of each classification grouping.

These costs are expressed in gross weight units. Translation into net weight units can be accomplished by expanding the gross weight unit cost by the ratio of the net load (for which a scale is desired) to the gross load (net plus tare weight). A final step is the construction of the scale by adding a fixed terminal rate to a line rate varying with the distance.*

Differences due to volume (volume loading) are evaluated by constructing different scales of rates which vary with the size of the load. Thus, if the cost per equated ton of a given movement is $1, the cost of a movement of 10 net tons in a vehicle having a tare weight of 20 tons will be $30 per car or $3 per net ton, and the cost of moving 50 net tons in the same car will be $70 per car or $1.40 per ton. This would mean a scale of net weight rates for each size load varying in some cases perhaps from 1 to 60 or more tons. The effect of this system is that all shippers pay the same base price per car (or container) for the movement plus the same rate for each net ton handled therein. The result would be that no shipment, however small, would be discouraged by a penalty charge, but on the other hand, maximum rather than minimum loading would be encouraged. If the equipment were confined to present types such a system would tend to make it difficult for small shippers to compete with larger ones. When the container is introduced, however, the maximum sales unit (12 1/2 tons per container) generally would be less than the average present minimum sales unit.

## XVI TARIFFS

### 57. Purpose Served by Tariffs

### 58. Present Tariffs

Waterway — Due to the absence of uniform and comprehensive regulation of the water transportation industry, there is no uniformity of tariffs of water carriers between trades. Contract carriers rarely have any tariffs at all. Eight common carriers in the Atlantic Coast territory are directly or indirectly owned or controlled by rail carriers. These companies are subject to the Interstate Commerce Act and publish tariffs in accordance with the rules established by the Interstate Commerce Commission. Some common carriers operate through services with rail connections and publish tariffs

* Equation should be made for the fact that the average distance traveled is 11 percent in excess of the direct distance; Analysis 71.1.



comparable with those of rail lines. In some services, conferences have been formed from time to time in an attempt to bring about stability. These conferences, however, have been of varying durations, have rarely included all carriers engaged in the particular trade, and have never obtained complete adherence to uniformity in rates, practices, and tariffs.

Petroleum — Petroleum pipe line tariffs are much simpler and less pretentious documents than their inspirations and preceptors - railway freight tariffs. Pipe line tariffs fall into several more or less distinct classes:

(1) Tariffs naming rates, rules and regulations for trunk line movements of crude petroleum, refined petroleum products, or both crude and refined commodities;

(2) Tariffs naming rates, rules and regulation for gathering services;

(3) Tariffs naming charges, rules and regulations naming charges for special or terminal services, such as storage, demurrage, loading or pumping into tank cars or vessels, transfer, and transit services such as blending-in-transit; and,

(4) Tariff indices listing tariff publications.

In some cases, single tariffs contain the rates and charges for trunk line, gathering line, and special and terminal services; but in other instances, separate tariff publications are used as the media for the official dissemination of information with respect to the several types of services.

It is noteworthy that no agency tariffs are published in petroleum pipe line transportation by a single tariff publishing agent, authorized, by appropriate powers of attorney and concurrences, to act as the tariff publishing agent for several or a number of carriers. This is quite unlike the wide use of tariff publishing agencies in the field of railroad transportation. Furthermore, no traffic associations, which publish agency tariffs in many cases for member and concurring railroads through their respective tariff bureaus, exist to perform this function for pipe lines. Explanations of these phenomena are found, doubtless, in the highly individualistic character of the pipe lines and the close affiliation of many pipe lines with the proprietary petroleum refining companies. Although many of the pipe line tariffs are individual local tariffs, there are numerous joint tariffs published by one line and concurred in by one or several connecting pipe lines.

The pipe lines engaged in interstate commerce are subject to the provisions of Section 6 of the Interstate Commerce Act requiring common carriers to publish and file their tariffs.

Evidence of the concurrence of participating carriers in joint tariffs is required of pipe line as well as of rail carriers. Changes in tariff rates and charges may be made only upon statutory notice, except as special permission to file upon less than statutory notice is granted by the Interstate Commerce Commission. The Commission may, moreover, suspend the effective dates of pipe line tariffs at its discretion either upon complaint or upon its own motion, as it may in connection with the tariffs of all types of interstate carriers subject to its jurisdiction. There are similar but not identical regulations of State regulatory commissions in a number of States requiring the pipe line companies to publish rates.

The rules and regulations of pipe line companies are not uniform, so that generalization is difficult, and apt to be dangerous if interpreted too literally as a complete codification of pipe line rules and regulations.

The regulations of a typical crude petroleum tariff can be divided into eight types of provisions pertaining respectively to:

(1) Marketability or merchantability of the oil;

(2) The quantity of the oil and apportionment of service among concurrent tenders;

(3) Transportation of oil involved in litigation or subject to liens for charges;

(4) Satisfactory evidence that the consignee is able to accept delivery promptly;

(5) Statement of the rates in U. S. Government barrels of 42 gallons at 60 degrees temperature, Fahrenheit, minimum tender requirements, carrier lien for charges, and advance or prepayment of charges;

(6) Charges for special and terminal services, including: Gathering services, storage, demurrage, transfer, blending-in-transit, and loading;

(7) Storage incident and necessary to the transportation furnished without extra charge for a limited period, usually five days;

(8) Liability of the carrier limited, in the absence of negligence, to exclude liability for loss, damage or delay caused by an act of God, fire, flood, riot, insurrection, rebellion, war, act of the public enemy, quarantine, authority of law, or act or default of the shipper or owner.



Gathering pipe line tariffs provide rates and rules and regulations applicable to the gathering of the petroleum at the wells, the movement to the concentration points, and the storage at the concentration points. Storage charges are assessed upon the basis of the daily balance of oil held in storage. Percentage deductions, usually higher than the deductions made in case of trunk pipe line transportation, are provided to be deducted for evaporation and waste from the total quantity of oil gathered, and further deductions of a fraction of one percent for each degree are provided for in case the oil is heated above the cold temperature of oil in the same vicinity on the date of acceptance.

A special type of transportation service which is neither gathering line nor trunk line service is sometimes provided by pipe line companies in transferring petroleum short distances between the storage tanks of industries or between the industrial storage tanks and tanks at junctions of connecting pipe lines.

Highway

Highway freight operations, having but recently become a factor in transportation and being subject to limited and localized regulation as to rates and charges, have not developed a uniform system of tariffs. In some instances tariffs of rail carriers have been adopted with modifications to suit specific situations; in a number of States regulatory bodies prescribe the form and bases of tariffs covering intrastate operations; but as a general rule highway common carriers issue and use tariffs, rate cards, and circulars covering individual operations only Highway contract carriers generally treat each transaction as a separate matter and so do not use printed tariffs.

59. Defects

60. Modernization

## XVII STATISTICAL ANALYSES

### 61. Necessity for Uniform Statistical Analyses

General

Adequately to budget expenses for the future, management must know not only how much was spent in the past for a given service, but the extent of the service which that expenditure provided; the location of the expenditure; and the conditions with respect to location, service and operation which made the expenditure necessary. It must also know the result of expenditures under each of many different sets of conditions, and more important still, it must know the service which it will be called upon to render during the period for which the budget is prepared. To obtain this information, an accurate appraisal of unit costs from a location and service, as well as from a function standpoint, is necessary.

The advent of new transportation facilities, and the demand for improved service, require also that management be acquainted in detail with the cost and effect of various operations and of personnel responsible for them. It must have at hand data from which it can establish norms: For the purchase of labor and material; for the performance of service; and to measure the relative efficiency of officers or of personnel groups, and also of different methods or facilities or different agencies. To make such comparisons it is necessary that expenditures be expressed in units of service and traffic.

The need for statistical analyses of operations increases with the area of the operations. Where these operations are limited, relatively fewer statistics are required than where they extend over wide areas. Consolidations or other forms of unification increase the demands upon management for supervision, and bring about still greater need for statistical data upon which to base supervisory activities.

The newly developed ability of the shipper to provide his own transportation is tending to make cost of service a factor of prime importance in its pricing. For this purpose rough approximation no longer suffices. To price its transportation the carrier must analyze and appraise every factor which affects its own service and costs, and also the service and costs of competitors, including in the latter category the shipper himself. Unremitting study to improve the service and at the same time to reduce the expense of rendering it is demanded.





Because of the oversupply of transport facilities, and of the destructive competition and strife between the various forms of transportation, it is necessary for regulatory bodies, as well as the carriers themselves, continually to measure and appraise the relative utility of every form of transport agency from both a service and a cost standpoint. To make such an appraisal, statistics of service, traffic and cost, are essential.

### 62. Factors of Operative Utility

### 63. Criteria of Operative Utility

### 64. Present Accounting Practices

Railway

The accounts of railway carriers are kept currently in accordance with a classification prescribed by the Interstate Commerce Commission, which is the outgrowth of carrier experience over a long period of years. In its fundamental aspects this classification followed those which had been used by the more progressive railways for some years prior to its prescription. Its working is now understood by thousands of accountants, statisticians and investors in and out of the railway field. Any radical changes in the classification, therefore, would have serious repercussions in fields far beyond those of mere railway accounting.

The Commission has prescribed for rail carriers three classifications of accounts: A classification of investment in road and equipment accounts; a classification of operating revenue and expense accounts; and a classification of income, profit and loss, and general balance sheet accounts. The underlying survey dealt principally with the classification of operating expenses, and in a small measure with the classification of income accounts. Operating expenses of carriers are grouped in eight general categories: I Maintenance of Way and Structures; II Maintenance of Equipment; III Traffic; IV Transportation Rail Line; V Transportation Water Line; VI Miscellaneous Operations; VII General; and VIII Transportation for Investment Credit.

The Commission requires the carriers to separate, directly where possible, otherwise by apportionment, the expense of conducting passenger business from that of conducting freight business. It is with the latter accounts only that this report deals.

### 65. Present Carrier Statistics

Railway

The Commission requires the carriers to report annually the following statistics of rail line operations, separately for freight and passenger services: Train miles, locomotive miles subdivided for train switching and yard switching; freight car miles, loaded and empty; mixed train freight car miles, loaded and empty; and tons and ton miles of revenue and non-revenue freight.

The carriers also report the following statistical averages: Freight train miles and freight locomotive miles; freight car miles (loaded and empty) per mile of road; freight ton miles, revenue and total; and freight car miles, loaded and empty, per freight train mile; and freight ton miles, revenue and total, per freight car mile.

The carriers are required to report annually by systems the following traffic statistics: Cars, tons and revenue freight carried by the 156 commodity groups of the Commission's freight commodity classification; and cars and tons (but not revenue) of each commodity originated and terminated, originated and delivered to connections, received from connections and terminated, and received from and delivered to connections.

In many cases, although not required to be so reported, these statistics for their own convenience are localized to smaller segments of the reporting carrier, such as operating or accounting divisions.

### 66. Modern Statistical System

General

To furnish the information described in The Report will require correlation of the following data with respect to transport activities and costs: (1) Personnel responsible; (2) kind, type and quantity of labor, service or materials acquired or applied; (3) carrier and geographic location; (4) facility, individual and type to which the application is made; and (5) the service in which it is incurred, both generally and particularly.

These objectives can be obtained without disturbance of the present classification of accounts by earmarking expenditures at the time of original entry with respect to the matters enumerated above, and contemporaneously correlating them with primary traffic and operative service units similarly localized.



The purposes of this correlation would be: (1) to localize all services and directly allocate many expenditures which at present must be apportioned statistically, if a cost study is to be made; and (2) to furnish data by which joint costs can be apportioned accurately between locations, facilities or services by using the service factors, such as train miles, gross ton miles, locomotive ton miles and the like, which apply at the particular location or in the particular service, instead of system wide average factors such as are now necessary.

Throughout carrier organizations, time of officers and men is employed in compiling statistics relating to particular fields or activities and for many different purposes. It is difficult, if not impossible, to summarize the resultant statistics. Under the system suggested, each debit item (voucher, payroll, journal entry, etc.) would be analyzed and mechanically recorded on tabulating cards in such form as to permit subsequent tabulation, if, as and when required from every standpoint. Such records would contain full accounting as well as statistical data, resulting in complete harmony of accounts and statistics at all times. The total expense of keeping accounts in this manner should be less than the present cost. While the expense of accounting might be increased, this increase would be offset by the elimination of much statistical work in the other departments and the avoidance of duplicate work thereby entailed, not only in compiling present statistics, but in attempting to reconcile them with one another or with the accounts.

## XVIII CARRIER INQUIRIES

### 67. Statistics Used in Carrier Inquiries

Railway

In response to the rail carrier inquiry, in addition to the statistics required by the Commission, the carriers furnished the ton miles and the revenue of each of 156 commodities, subdivided between local, interline originated or terminated, and overhead or intermediate traffic.

Where the information was not readily available for the entire year, a waybill reanalysis was made for a typical month and the actual 1932 revenue for the year of each commodity distributed to car miles and ton miles, respectively, upon the bases of the average revenue of such commodity per car mile and per ton mile, during the typical month.

The actual ton miles of all commodities for the year were checked against the total ton miles aggregated by commodities and special studies made in any case where there was not substantial agreement.

Carriers also furnished statements showing the distribution of commodities (in cars) among different classes of terminal service in each of the terminal districts. To bring the study within reasonable limits, the 156 commodities were grouped into 24 groups, which are shown in analyses 1.9 and 1.10. The actual number of cars of each commodity handled during 1932 were distributed in accordance with the results of two test weeks, one in each month of the year in which the carrier received its maximum and its minimum traffic. The total number of cars obtained in this manner for each terminal district was reconciled with the total number of cars actually terminated in that district, whenever there was substantial variance, by special study.

Carriers segregated their system, operative and traffic statistics, (which are furnished the Commission annually) with respect to individual operating districts, thereby making it possible to compute average unit costs for such operating district, since expenses were likewise segregated into such districts.

Carriers also furnished statements showing in detail the loaded and empty cars interchanged by them during the year 1932 by carriers, junctions and directions; the number of carloads and consignments received and forwarded at each station during 1932, and (by use of test periods) the track service by classes of tracks in each district.

Finally, carriers traced from point of origin to point of destination, car by car, all carloads which were terminated on a single day - December 13, 1933 - reporting with respect to each car its origin and track service, destination and track service, commodity, weight, charges, number of reconsignments and interchanges, car miles, ton miles, and elapsed days spent in each terminal and on the road while en route.

Waterway — The questionnaires sent to water carriers were designed to secure from each respondent the regular as well as irregular services operated; the total mileage of voyage, the days consumed on voyage, the ports or cities served in order and the frequency of service, all separated as to outward and inward voyage; the period or season, if service was seasonal; and whether owned offices or agents were used at each port.

The ten principal commodities handled during 1932 were requested for each service, shown separately for outward and inward voyage, and the percent that each such commodity was of the total tonnage handled on the respective movements. The total l.c.l. traffic handled on each service was shown as the eleventh commodity.



Total tonnage by services, l.c.l. traffic by services, and the approximate percent of capacity to which units were loaded, separately, for outward and inward movements, were reported for the five years 1928 through 1932.

The average revenue per ton on all traffic, the average revenue per ton on port-to-port traffic, and the average revenue per ton accruing to water carriers on through traffic were reported for each service operated, separately, both outward and inward, for the year 1932.

Tons handled and average revenue per ton, outward and inward for each service, of express traffic, for the year 1932, were also obtained. Mail pay received in 1932 for each service, outward and inward, was reported.

Highway — Replies to the Coordinator's motor truck inquiry were received from 503 operators in 40 States, unit cost data being furnished on approximately 18,500 vehicles. Of the 503 replies, 285 were from private users, 162 from independent for-hire operators, 18 from railways owning and operating trucks, while 38 were unclassified. The vehicles ranged from small half-ton delivery units to trailer combinations having a gross weight throughout annual mileage of about 65,000 pounds, being operated individually and in fleets comprising up to 3,761 vehicles. On the whole, the sample is geographically representative of motor truck distribution, although it is heavily dominated by fleet conditions.

The information furnished by operators was supplemented by additional data from the U. S. Bureau of Public Roads, U. S. Department of Commerce, Highway Research Board of the National Research Council, Iowa State College Engineering Experiment Station bulletins, Society of Automotive Engineers handbook, Markel Service, Inc., and truck manufacturers.

In a field survey covering large and representative terminal trucking operations in a number of cities, cost and performance statistics were supplied in considerable detail by the individual operators.

## 68. Unit Costs Used in Carrier Inquiries

Railway — The carriers were asked to deal with their 1932 accounts by accounting divisions, that is, the smallest segment in which their system was subdivided for disbursement accounting. Supervisory accounts (not including traffic or general expense) of each general function group (maintenance of way and structures, maintenance of equipment and transportation) were then ratably surcharged upon the primary direct accounts in each group.

The first problem was to group the operating characteristics common to shipments in varying degrees between those in which distance was a factor (line operations) and those in which it was not (terminal operations). This localization can be made most conveniently in two steps - first between road and yard operations, and second, between yard operations in line service and those in terminal service.

Many of the primary accounts were directly localized between road and yard. The remaining primary accounts were grouped into 13 groups, cognate in the sense that where common to two or more locations or services they could be and were apportioned upon the basis of the same "use factors". The basis of this apportionment is described in detail in the analyses and exhibits. Generally speaking the common way expenses (relatively small) were apportioned upon the basis of the direct accounts; the maintenance of power upon the basis of locomotive miles.

Distribution of car maintenance between road and yard presented a more difficult problem. As yet data revealing the relative user damage to cars in road and yard service is extremely meager. It is certain that car miles do not adequately reflect this use. The weight of informed opinion seems to be that as between road and yard, a per diem basis, though confessedly inadequate, is the best criterion available and, therefore, that basis was used in the inquiry.

A refinement of the per diem basis has been suggested which has much merit. It is that the expense of depreciation and retirements be apportioned wholly upon a full per diem basis insofar as they are occasioned by use upon a carrier possession time basis, i.e., eliminating the time the car was in the possession of the patron being loaded or unloaded.*

The 13 road accounts thus segregated were further grouped with respect to 6 general functions and distributed among operating divisions on the following bases: Road maintenance - gross ton miles; car maintenance - loaded car days; road transportation and the road proportion of station maintenance and operation - road transportation wage expense. The costs in each operating district were finally apportioned between manifest, drag, main and branch line way trains,

* Using the conventional A.R.E.A. distribution of repairs between use (65 percent) and time (35 percent) and the ratios of carrier road(33 1/3 percent) and yard (66 2/3 percent), car days developed in the one day test on this basis would effect a reduction of only 2 1/2 percent in terminal expense computed on a strict per diem basis.



upon the following bases: Road and power maintenance - gross ton miles;* car maintenance - loaded car days; road and station transportation and station maintenance - road transportation wage expenses.

Yard expenses of the accounting division were distributed among terminal districts embraced within the division upon the following bases: Road maintenance - yard track miles; power maintenance and yard transportation - locomotive hours; car maintenance - loaded car days; station service - consignments (equated by multiplying the l.c.l. consignments by one plus the ratio of platform labor expense to the remaining expense of station employees); water transfer and dock maintenance, directly, wherever possible, otherwise on vessel hours.

The yard expenses of each terminal district were then distributed among ten classes of yard track service: Cars originated or terminated in single carrier terminal service on (1) house, (2) team, (3) industry tracks; cars originated or terminated in multiple carrier service in (4) connecting switch service, (5) house track; (6) team track, (7) industry track service: (8) cars intermediately switched, (9) cars interchanged in road-haul service, or (10) intermediately yarded (single carrier) in road-haul service. Yard expenses were apportioned between these services upon the following bases: Station maintenance and operation - equated consignments; car maintenance - loaded car days; water transfer, wharves and docks - vessel hours; road and power maintenance and yard transportation - engine hours employed in each service.

The latter apportionment required that the hours of yard locomotives respectively employed in four assemblage functions - classification, transfer, interchange and terminal receipt or delivery - be first ascertained and reduced to a unit basis of cars handled in each service. In the interests of time and economy, a nationwide study to develop this information for individual terminal districts was not possible. In lieu thereof, the carriers made some three hundred such studies under a uniform method, including practically all metropolitan districts and a large number of major terminals in all parts of the country. Similar studies were made of local freight train switching in minor terminals in practically every State.

From these studies average engine minutes per car in each of the ten classes of service were developed. These averages were applied to the actual cars handled to obtain

* A refinement was later made by substituting a locomotive ton mile basis - see section 80 infra.

synthetic engine hours employed in each of the ten classes of service in each terminal district.* The actual yard expenses of each district were apportioned upon the basis of the percentage distribution of the synthetic engine hours so developed.

At large "gateway" cities in each territory where complete switching tests had been conducted, the results of such local tests were applied individually to those cities.# The tests at the remaining metropolitan areas in each of the nine rate territories were then aggregated and the results applied to each of the other metropolitan cities within that territory. Similarly the averages of the tests at major and minor terminals in each rate territory were applied to the other major and minor terminal districts in that territory.

Waterway — The average cost per ton for the period January 1, 1933 to June 30, 1933 was reported by ports for stevedoring, checking and clerking, watching, wharfage and dockage, insurance of men and gear, overhead and supervision, and other miscellaneous terminal expense, all separated as between loading and discharging.

The average monthly cost for the period January 1 to June 30, 1933 was obtained for executive and management expense; traffic department and solicitation expense, billing, cashier, and other clerical expense; the cost of shore staff for ship operation; main office, outport and interior office expense; lighterage cost, aggregate and per ton; and allowances in lieu of lighterage, aggregate and per ton.

The average monthly cost of operating each self-propelled unit, based on the period January 1 to June 30, 1933, or on the average of May, June and July, 1933, where seasonal services were resumed after January 1, 1933, were reported for each ship, broken down as to wages of crew, fuel, deck and

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* In all tests in all metropolitan districts and in all except a limited number of major terminal districts, these synthetic hours did not vary from the actual engine hours for the year by as much as 10 percent.

\# Cities at which the individual tests were applied are as follows: Boston, New York, Philadelphia, Washington, Buffalo, Cleveland, Detroit, Toledo, Chicago, St. Louis, Pittsburgh, Cincinnati, Minneapolis-St. Paul, New Orleans, Portland, Seattle, Denver, San Francisco, Los Angeles, Kansas City, Omaha, Atlanta, Birmingham, Louisville, Memphis, Houston, Dallas and Fort Worth.



engine supplies, steward's supplies and food for crew, marine insurance - hull and engine, P. & I. insurance, taxes, repairs, depreciation and all other transportation expenses.

The average voyage cost of operating non-propelled units, based on May, June and July 1933, was secured, showing the class of equipment, wages per unit, loading, discharging, towing and total transportation costs, separated as to upstream and downstream.

General taxes for the calendar year 1932, such as real property, personal property, floating equipment, franchise or privilege, income, gross revenue, capital stock or other, were also reported.

Highway — Highway freight operations in the large sense can be analyzed either from a function or service viewpoint. The first involves a segregation between "transportation" elements and "maintenance" or "overhead" elements. Due to the nature of highway transportation these elements may easily be grouped into "variable" and "fixed" costs for convenience in accounting and use. From the service viewpoint, highway operations are separated into terminal and line-haul movements with the cost accounting system set up to reflect the cost of each type of service. Both function and service costs are necessary to properly evaluate any transportation operation and both have been used in the study of motor truck costs.

The number of items and amount of detail used by truckmen in expressing function costs were found to vary considerably. To reconcile the hundreds of voluntary reports, "variable" costs were grouped into a limited number of accounts, comprising: Gasoline, oil, tires, maintenance, garage miscellaneous, vehicle depreciation, drivers' and helpers' wages, variable license fees, gasoline and oil taxes. Likewise, "fixed" costs were grouped as follows: Garage rent; vehicle insurance; interest on investment in vehicles; general overhead, salaries and wages; general overhead, other; licenses and taxes, not variable.

From the aggregate expense and performance data, unit costs were developed as follows: Cost per vehicle day, per vehicle hour, per vehicle mile and cost per net ton, as well as the cost per loaded container for varying lengths of haul.

69. Statistical Procedure

Waterway

The returns received indicated that much time and expense had undoubtedly been involved in their preparation, but the accounting and statistical records of the various companies were not such as to enable all carriers to return comparable replies as to all the details requested. With limited exceptions, however, sufficient data were obtained to be representative of the industry as a whole and for each class of service and the several territorial districts.

The statistics pertaining to equipment and physical property of water carriers were compiled for common, contract, private and total carriers for the industry as a whole and for the six territorial districts.*

Routes and services of water carriers were analyzed for common, contract and private carriers in each of the six territorial districts and summarized for each district and for each of the classes of carriers. They were grouped according to ports of origin showing ports of destination and ports of call en route; the number of companies operating from each port; the number of routes served; the total round trip mileage of all routes; the average round trip mileage per route; the average time required for round trip in 24-hour days per route; and the number of round trips made annually.#

The tonnage handled by each class of carrier in each of the six territorial districts was analyzed and summarized by district and by class of carrier. Tonnage figures were compiled by each of 23 principal commodity groups, miscellaneous and l.c.l. for all routes from ports of origin showing ports of destination and number of companies reporting.ø

Since many respondents did not keep records of their tonnage in port-to-port order, certain estimates were necessary to obtain ton mile figures. Such estimates took into consideration the length of haul and the known tonnage attributable to particular ports. The balance of the total reported tonnage was attributed to other ports upon estimates. These estimates were based upon the size of the other ports, the type of commodity involved and the number of calls en route. The proportions of the total reported tonnage that was overhead and the proportions received or discharged at intermediate ports, the overhead mileage distance and the location of the intermediate ports were used as factors to estimate ton miles.

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* Exhibit 801, Appendix.
\# Exhibit 802, Appendix.
ø Exhibit 803 .



The weighting of the tonnage and the location of the intermediate ports against the overhead ports made possible the calculation of an average tonnage for the entire route. For example, if the data reported or estimates made revealed that intermediate stops for unloading were of such importance that a vessel carried only 50 percent of its original 1,000 ton cargo over the entire route of 100 miles, and the other 50 percent traveled over only one half of the route, the ton miles would equal 100 x 500 plus 50 x 500 or 75,000 ton miles.

The reports covering by far the greater part of the tonnage, however, were in such shape that such estimates were not necessary.

Estimated ton miles which would have resulted had the water-borne tonnage been handled by railroads were also computed. For all overhead tonnage this was a simple matter. The tons moved multiplied by the route miles of the most direct practical rail route produced the desired figures. Where estimated ton miles by water routes had to be obtained, because of insufficient data in the reports as to tonnage handled intermediately, these estimated water ton miles were used to compute the average mileage of all the tonnage handled on a route. In the case of the example, in a preceding paragraph, where one half the tonnage traveled 100 miles and one half the tonnage traveled 50 miles, the average distance that all the tonnage traveled was 75 miles. By determining the total overhead rail distance through the intermediate ports of call, and the percentage that all the water tonnage traveled on a given route of the overhead water route distance, workable estimates of rail ton miles were made.*

Operating expenses were divided as to maintenance, traffic, transportation and administration. Maintenance expenses were separated as between vessels and terminals, and traffic expenses as between sales, clerical and supervision. Transportation expenses were divided between vessel operating and terminal expenses, each of which was further subdivided into the various types of expenses which were reported as requested in the questionnaires. Administrative expenses were divided between executive and management, insurance, taxes and other. Grand total of all operating expenses was compiled, and total cost of freight operations was obtained on a revenue prorate basis. These operating expense figures were determined for each class of carrier in each of the six districts and totaled for each class of carrier and for each district. Freight revenues and the ratio of freight costs to freight revenues were also ascertained by classes of carriers, by districts and for class and district totals.#

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* Exhibit 803. # Exhibit 804.

The average cost and average revenue per ton, the ratio of cost to revenue per ton, the average cost per ton mile by water, the average revenue per ton mile using actual water routes and also using estimated rail distances, the ratio of water cost to revenue per ton mile, the average cost per ton and per ton mile at capacity, and the percentage that the 1932 tonnage was of total freight tonnage vessel capacity for each class of carrier in each of the six districts and for totals by classes of carriers and by districts were computed.*

Highway

In the terminal trucking field study the object was to discover differences in trucking costs arising from variations in the type of terminal work done, the kind of equipment used, operating methods employed, and the size, location, geography and relative congestion of the terminal. As this report deals solely with the quantity movements of freight, excluding merchandise traffic, only movements of full truck loads in terminal areas were studied, pick-up and delivery service of odd lot merchandise being excluded.

Studies were made at New York, Chicago, Milwaukee, St. Louis, Cincinnati, Philadelphia, Little Rock, Arkansas, and Texarkana, Texas. Detailed cost information was developed for eighteen distinct operations involving medium and heavy-duty trucks, tractors and semitrailers, some vehicles being equipped with fixed and some with demountable bodies. Operations in other cities could have been studied profitably, but the ones which were covered include the largest terminal trucking operations in the United States as well as all of the special types of terminal truck equipment to be found. Studies at other cities would have developed no other unique or distinctive types of operation, and so were omitted.

In the New York metropolitan area six operations were studied and in addition the results of a 1934 survey by the New York State Motor Truck Association were made available. The Port of New York Authority likewise cooperated splendidly by supplying pertinent information which it has collected for more than a decade. Four distinct types of operations were studied in Chicago, three in St. Louis, two in Milwaukee, and one each in the other cities. Several of the operations are performed directly by railroad companies, two by private concerns performing warehouse distribution, and all others by terminal trucking companies.

With respect to the Coordinator's motor truck study, analysis 75.5 summarizes the information received from the truck operators, the vehicles being divided into six gross

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* Exhibit 805.



weight groups: Less than 5,000 pounds, increasing by 5,000 pound increments to 25,000 pounds, and those over 25,000 pounds. From these data the variable and fixed costs of private and for-hire operations of various capacity truck units shown in analysis 75.6 were developed, together with the miscellaneous averages shown on the same analysis. The basic data for each of the important elements affecting highway operating costs were plotted for the six vehicle gross weight groups, formulae were developed by inspection and from weighted averages, and the resulting equations shown graphically on page 127 et seq.

The operating cost data which were developed allow for but one variable - that of vehicle size in terms of gross weight, and of course represent average trucking costs, primarily for highway movements as distinguished from purely terminal service. Many other factors in addition to vehicle size influence specific operations to such an extent that total operating costs of individual vehicles may vary as much as 50 or 60 percent from the average values here developed. The existence of such influences rendered the presentation of actual instances of truck costs so subject to interpretation that generalized conclusions from them would be unreliable except through the establishment of trends of averages. The conclusions that may be drawn will represent the truth, insofar as broad, nationwide conditions are exemplified in the data on which the study is based.

Truck costs are influenced by many variables, and in different ways. Hardly the experience of any two trucks involves the same influences, much less to the same degree. They may be of the same age, make and model, carry the same load, operate over the same highway, and yet their costs may be quite different. The drivers will be different, though both may be valuable employees; the tax may be different, if one is a private carrier and the other a common or contract carrier; the fuel cost may vary, if purchased in different States; and a host of other minor factors may enter into the costs of the particular trip. But if their annual mileages, or their average load factors, or their idle hours vary greatly, their costs for the operating year will scarcely be comparable. Nevertheless, similarity of manufacturing technique, automotive maintenance technique and a general standardization of vehicle types for average use, are responsible for certain underlying regularities which show up as the more superficial causes of variety are lost in the averaging processes.

Dominant among the causes of variation throughout the entire truck range is the element of gross weight. Vehicle price, and actual capacity, and annual mileage, are related to it. Price and capacity are so related because gross

weight represents the quantity of metal or machinery put together in a certain way for a definite load-bearing purpose, plus that load; and annual mileage is related to it because annual mileage determines the spread of the overhead, and the larger the investment, the greater will be the pressure toward spreading that overhead, or conversely, if the traffic and mileage requirements are not present the investment is less likely to be made. And since all items of cost are in some way related to investment or to mileage, it is only natural that they will also relate to weight. The analysis, therefore, resolved itself into a comparison between the gross weight of the vehicle and each item of cost separately, and a summation of the item averages thus derived in the determination of normal totals.

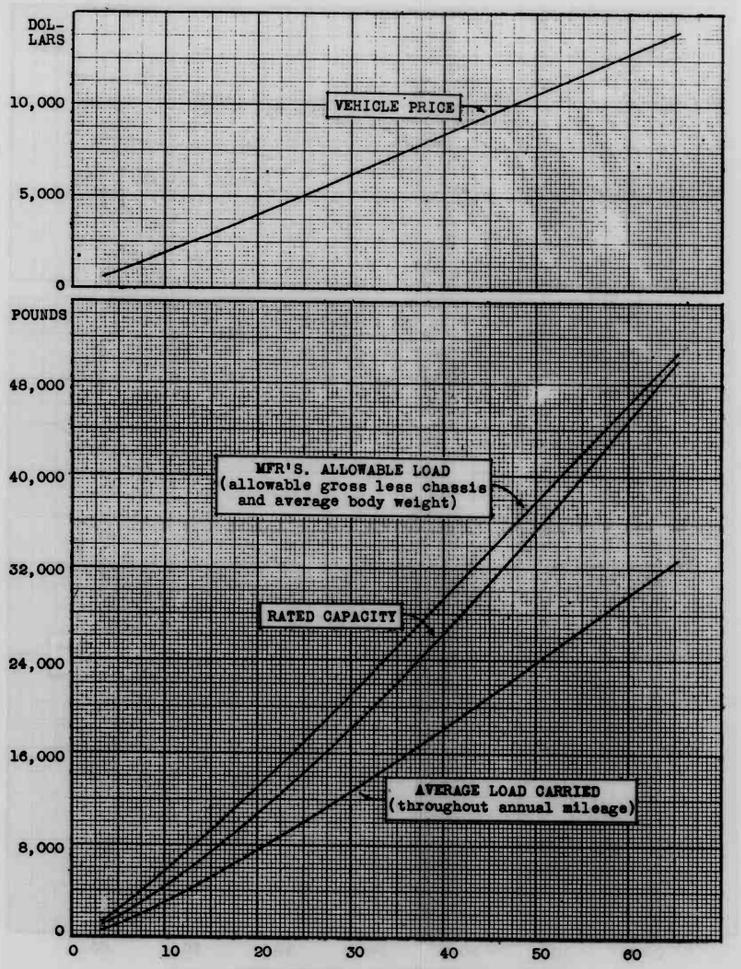
A logarithmic relation was found to exist very definitely in all principal items, i.e., for each percentage increase in gross weight there was a constant percentage increase in the item. In all operating costs except one there was a smaller relative increase in the cost item than in gross weight, and that single item was license fees and taxes. In other words, taxes increased at an increasing rate, while other cost items increased at a decreasing rate as the gross weight increased.

It may be observed that the curves are not always curves of best fit for the group averages (page 127 et seq.) But it will also be observed that certain groups, quite out of line, contain far more trucks than those seemingly in order, and methods of best fit would give weight to the number, or again, if based on the average would be misleading.

The particular procedure followed in fitting each curve is discussed along with each item in the following pages. In general, however, the slope of the logarithmic straight line, representing the exponent was first determined by inspection, and by careful comparison with the experience of fleets whose records were especially complete or especially trustworthy. The coefficient was then determined as the weighted average coefficient for the trucks involved in all six group averages, or as the simple mean of the six averages, depending on the particular circumstances. The equations thus developed were applied to gross weight values for the rated capacities provided in analysis 75.6, and the results are presented therein.

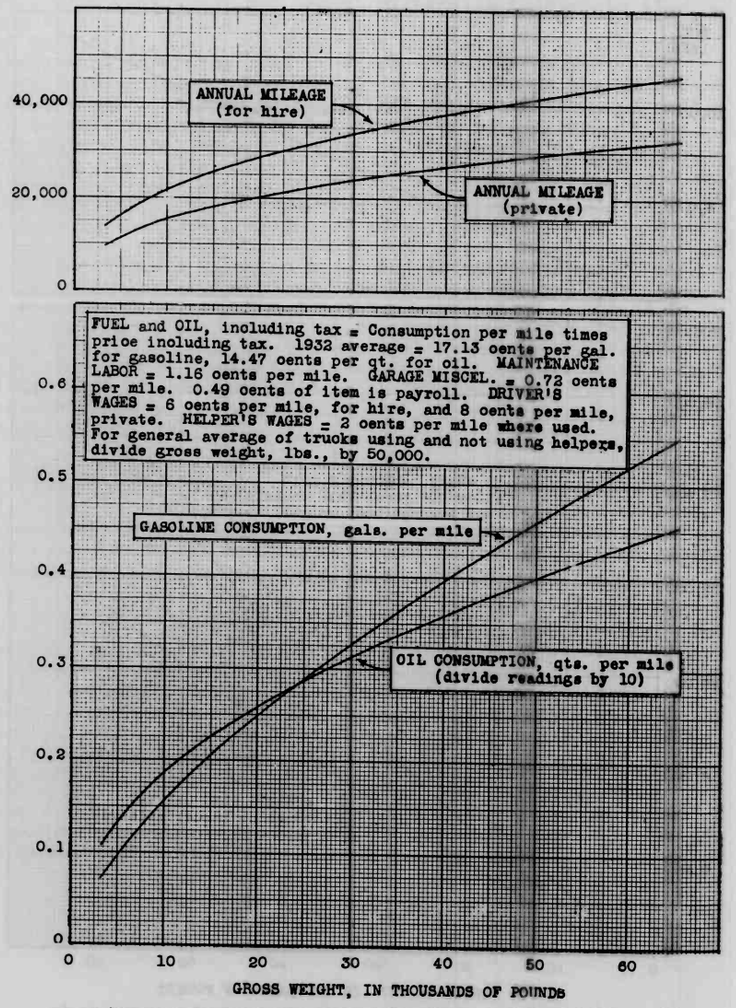


CHART FOR DETERMINATION OF MOTOR TRUCK OPERATING COSTS - SECTION ONE




(Compute Average Gross Weight throughout annual mileage, or determine 1932 average by reading down from Rated Capacity Curve.)

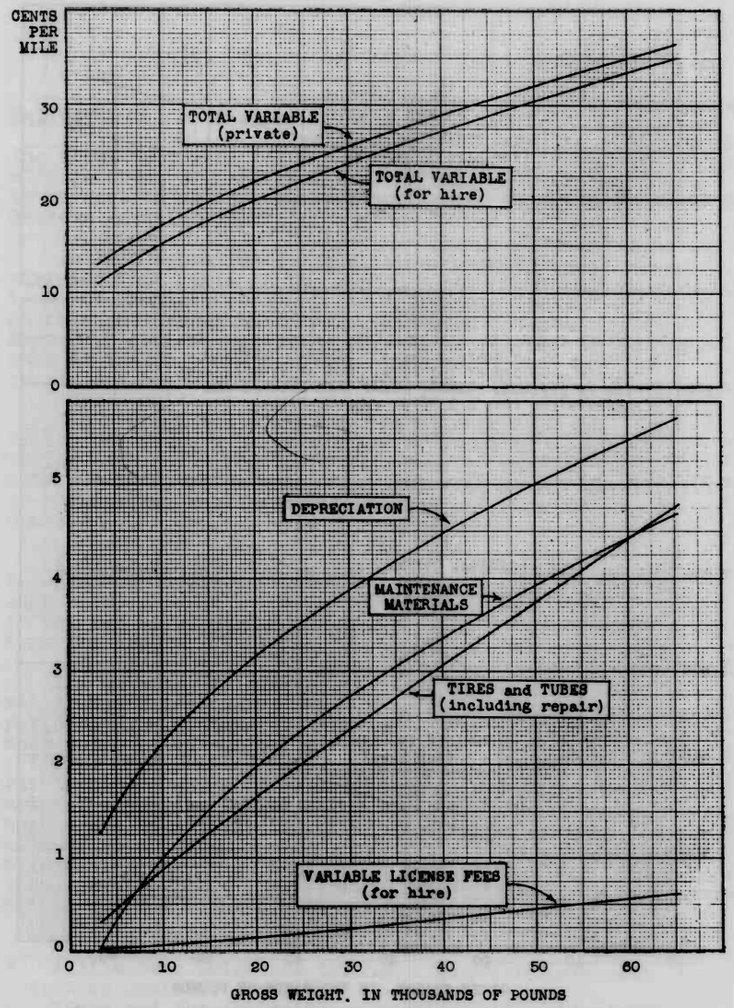
CHART FOR DETERMINATION OF MOTOR TRUCK OPERATING COSTS - SECTION TWO




(Compute Average Gross Weight throughout annual mileage, or determine 1932 average by reading down from Rated Capacity Curve.)

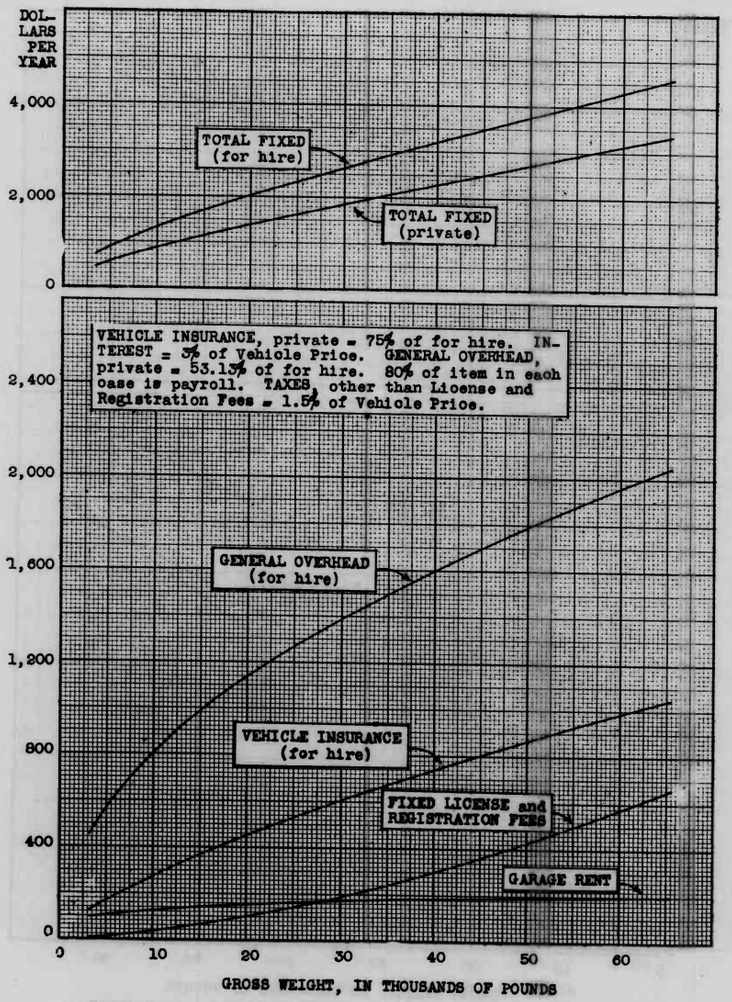


CHART FOR DETERMINATION OF MOTOR TRUCK OPERATING COSTS - SECTION THREE




(Compute Average Gross Weight throughout annual mileage, or determine 1932 average by reading down from Rated Capacity Curve.)

CHART FOR DETERMINATION OF MOTOR TRUCK OPERATING COSTS - SECTION FOUR




(Compute Average Gross Weight throughout annual mileage, or determine 1932 average by reading down from Rated Capacity Curve.)



## XIX NATURE OF OPERATIONS

### 70. Extent of Carrier Operations

Railway

In the United States there are 167 thousand road miles of main line* and 76 thousand road miles of branch line, the main lines constituting about 69 percent of the total mileage. Of this main line mileage about 31 percent is in the Eastern District; about 19 percent in the Southern District; and 50 percent in the Western District.

In 1932 approximately 5 million freight trains were operated (not quite 15 thousand per day) for an average distance of 73 miles each and for an average time of 4 1/2 hours each. About half the trains were operated in the Eastern Classification Territory; a little less than 20 percent in the Southern Classification Territory; and the remainder in the Western Classification Territory.#

The average train density per mile of road was 1,611 trains per year, a daily average of slightly more than 2 trains each way. The train hour density was 100 hours per mile per year, which means that the road at any given point on the average was in use 16 minutes out of every day of 24 hours.

The car density per mile of road in car miles was 43 thousand car miles per year, which means the passage over each mile of track of about 117 cars per day. The density in net ton miles per mile of road was 970 thousand, or 2,650 tons per day.

The maximum utilization in train miles per mile of road was in Trunk Line Territory - about 3 3/4 trains each way per day. The minimum utilization was in the Pacific Northwest where it was a little less than 1 1/2 trains each way per day. The greatest net ton mile density was in Pocahontas Territory where it was 2,750 thousand net ton miles per mile of road; the lightest density in the Southwestern Territory where it was just under 500 thousand net ton miles per mile of road. The average gross ton miles per loaded car mile was 72 ton miles,ø of which 23 tons were net and 49 tons tare weight. These figures did not vary greatly between territories. The highest density per loaded car mile was in

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* A line over which one through freight or passenger train is operated per day.

\# These and the following statistics from analysis 70.4 and 70.5.

ø Analysis 70.3.

Pocahontas Territory, where the gross ton density was 90 tons and the net 38 tons. The lowest density was in the Pacific Southwest where the gross tons per loaded car mile were 65 and the net 17.

The average train in the United States handled 26 loaded cars. The maximum handled in any district was in the Pocahontas Territory where 33 cars were handled; the minimum in the Southeastern Territory where 21 cars were handled.

The average gross tons per train for the United States as a whole were 1,900. The highest were in Pocahontas Territory with 2,900 and the lowest in the Southeastern Territory with 1,500. The average number of net tons per train for the United States as a whole was 600. The highest was Pocahontas Territory with 1,250 and the lowest Southwestern Territory with 450.

The average number of train miles per train hour was 16.* This average speed was exceeded in Central, Southeastern and Southwestern Territories by 1 mile. It was equaled in the Pacific Northwest and Pacific Southwest Territories. The lowest speed was in Pocahontas Territory - 13 miles per hour.

Waterway

In the Atlantic Coastwise and Inland service, detailed reports were received from 46 companies, 32 common carriers, 5 contract carriers and 9 private carriers. Common carriers operated over 65 routes and made 14,262 round trips, the average mileage of which was 399 miles.# The average time required for a round trip was just over two days. The principal ports of origin were New York, Baltimore, Philadelphia, Norfolk and Savannah. Other ports of origin ranged from Maine to Florida. Ports of destination and intermediate ports of call included all principal cities on the Atlantic Coast and navigable rivers flowing into the Atlantic Ocean. The total mileage of the common carrier routes in this district amounted to 22,387 miles.# Contract carriers reported seven routes on which 250 round trips were made, averaging 954 miles in an average time of a little less than 5 days. Three of the seven routes were operated between Hampton Roads ports and the Carolina Coast, New York, Boston and other New England ports. The total mileage of all routes was 4,833 miles. Private carriers reported 17 routes on which 268 round trips were made, averaging 1,154 miles in 9 1/2 days per round trip. Eleven of these routes were from Hampton Roads ports both north and south along the Atlantic Coast and the total mileage of all routes operated by these private carriers was 13,680 miles.#

In the Atlantic Gulf service, detailed reports were received from 11 companies, 9 common carriers, 1 contract carrier and 1 private carrier. The common carriers operated 21

* Analysis 109.1.

# Analyses 70.2 and 70.3.



routes and made 1,142 round trips or an average of 2,482 miles in an average of 10 days per round trip. The principal services were between Boston, New York, Philadelphia, Baltimore and Florida ports and Mobile, New Orleans, Galveston and Houston. The total mileage of these common carrier routes was 26,139. Two contract and private carrier routes were reported. On these routes 38 round trips of an average 4,242 miles were made in an average of 35 days.*

In the Intercoastal service, 13 companies reported in detail. Eleven were common carriers, 1 a contract carrier and 1 a private carrier. The common carriers operated 13 routes, made 434 round trips of an average of 13,623 miles in an average of 77 days. The services were between Atlantic ports ranging from Portland, Maine, to Charleston, South Carolina; Gulf of Mexico ports and Pacific ports from San Diego, California, to Vancouver, British Columbia. The total mileage of the routes amounted to 88,127 miles. Contract and private carriers reported 2 routes. They made 16 round trips of an average of 12,050 miles in an average of 90 days.*

On the Inland Waterways-Mississippi System, 13 companies returned detailed reports, 8 common carriers, 4 contract carriers and 1 private carrier. The common carriers made 676 round trips of an average of 1,252 miles in an average of 14 days. The services reported covered principally the Mississippi River from Minneapolis to New Orleans, the Illinois River and canal system from Chicago to the Mississippi River, the Ohio River from Pittsburgh to Cairo, and the Warrior River system from Birmingport to New Orleans. The total mileage of common carrier routes in this district amounted to 9,489 miles. The contract and private carriers operated 9 routes principally over the Mississippi River from Cairo south, the Ohio River from Pittsburgh to Cairo and the Alabama-Warrior River system from Birmingport to New Orleans, made 230 round trips of an average of 1,069 miles in an average of 12 days. The total mileage reported was 4,110 miles.*

On the Great Lakes system, detailed reports were received from 53 companies, 17 common carriers, 23 contract carriers and 13 private carriers. The common carriers operated over 29 routes, made 12,623 round trips of an average of 148 miles in an average time of 19 hours. The principal services reported were on Lake Erie between Buffalo, Cleveland, Toledo and Detroit; between Lake Erie ports and Lake Superior Ports; and between Lake Erie ports and Lake Michigan ports. The total mileage of the routes operated by common carriers was 10,951 miles. Contract carriers operated over 45 routes of an average of 1,454 miles, round trip, and a total one way mileage of 36,004 miles. Their average time for a round trip was about 8 days and 1,250 round trips were made. The private carriers operated over 23 routes of an average round trip length of

* Analyses of 70.2 and 70.3.

1,139 miles and a total mileage of 13,422 miles in an average of about 6 days per round trip. Nine hundred and thirty round trips were made. The territory served by contract and private carriers was generally the same as that served by common carriers, except that some operations between the Great Lakes and the Atlantic Seaboard were maintained through the New York State Barge Canal.*

On the Pacific Coastwise and Inland service, detailed reports were received from 33 companies, 26 common carriers, 3 contract carriers and 4 private carriers. The common carriers operated over 63 routes and made 79,714 round trips of an average of 44 miles and a total of 14,099 route miles in an average of about 7 hours per round trip. Their major operations were coastwise between the Puget Sound and Columbia River districts, the San Francisco Bay district and the Los Angeles Harbor district; on the Puget Sound; on San Francisco Bay and tributary rivers; and from Puget Sound to Alaska. Contract carriers operated 4 routes of an average round trip mileage of 1,072 miles and a total route mileage of 3,686 miles. Their average time for a round trip was about 6 days. Their service was principally coastwise between Puget Sound and Los Angeles Harbor districts and 112 round trips were made. Private carriers operated 4 routes. Their average round trip was 376 miles, the total route mileage was 1,900 miles and the average time per round trip was about 6 days. Eight hundred and fifty-eight round trips were made.*

Petroleum

The data pertaining to the operation of pipe lines are obtained from the reports filed by the pipe line carriers reporting to the Interstate Commerce Commission. In 1932, the 46 principal pipe line companies reporting to the Interstate Commerce Commission operated a total route mileage of 92,783 miles of which 51,405 miles were main or trunk lines and 41,378 miles were branch or gathering lines.# The total ton miles of service performed by these companies aggregated 32 billion net ton miles, an average of 345 thousand ton miles per route mile of pipe line for the year.ø

The total revenues of the 46 reporting pipe line companies amounted in 1932 to approximately 212 million dollars of which 200 million dollars were earned for the transportation of raw materials; that is, crude oil and about 12 million dollars were earned in connection with the transportation of material classified as "Auxiliaries"; that is, refined petroleum.ƒ

* Analyses 70.2 and 70.3.
ø Analysis 70.1.
# Analysis 1.8.
ƒ Analysis 4.1.



## XX CIRCUITY OF MOVEMENT

### 71. Directness of Movement

Railway

The analysis of movements of all cars which terminated on December 13, 1933 made possible the determination of the average deflection from the direct route of rail shipments.* The direct route used in each case was not necessarily the shortest possible distance by rail, but was the shortest of the routes normally or customarily used.

In the United States as a whole the average car terminated on that day moved about 11 percent further than would have been necessary had it moved via the direct route. The same ratio of circuity (11 percent) also obtained in the three Districts - Eastern, Southern and Western. The greatest degree of circuity appeared in movements originating in the Pacific Northwest and moving to New England, 27 percent; in the Southwestern moving to Pocahontas Territory, 23 percent; from Pocahontas to Southwestern Territory, 18 percent; and from the Southwest to Western Trunk Line Territory, 18 percent.

The average circuity of cars of the several commodity groups is as follows: Live animals, 7 percent; grain, perishables, coal and coke, ores, 9 percent; edible animal products, 10 percent; stone and gravel, textiles, sulphur and sulphuric acid, forest products, manufactured food, 11 percent; miscellaneous farm products, non-ferrous metals, chemicals, appliances, 12 percent; paper and products, cereals, 13 percent; miscellaneous manufacturers, cotton, hay and tobacco, 14 percent; petroleum and its products, iron and steel articles, building materials, 15 percent; oils, vegetable and animal, 16 percent; and glass, 17 percent.

Waterway

Of the 320 routes analyzed, less than 20 could not be served by land transportation. These were principally routes between main land and islands off shore on the Atlantic Coast, the Great Lakes, Puget Sound and the Pacific Coast. The total reported freight tonnage carried over all of these routes served only by water carriers was about 150 thousand tons in 1932, or only about .3 percent of the total waterline freight tonnage.

In the Atlantic Coastwise district, the estimated number of ton miles incurred over the water routes was 4,168 million ton miles. Using railroad distances in this district, the ton miles which would have resulted had the traffic been moved by rail would have been 3,907 million ton miles. In this district the water routes were about 7 percent longer than rail routes. On the Atlantic Gulf service, the water ton miles were 4,376 million while rail ton miles would have been 3,573 million, indicating an advantage of about 22 percent in distance by rail as compared to water routes. Intercoastal

* Analyses 71.1 to 71.6, inclusive.

services required 23,169 million ton miles, whereas the use of rail distances would have resulted in only 10,137 million, or a saving of 56 percent. On Inland Waterways-Mississippi system, the ton miles by water routes were 3,010 million. The same tonnage could have moved by rail between the same points using 1,830 million ton miles only, or 39 percent less. On the Great Lakes system, the water ton miles incurred were 17,172 million. Rail ton miles necessary to have moved the traffic were 16,535 million, or 4 percent less. On the Pacific Coastwise district, however, the water ton miles used were 1,028 million, whereas rail ton miles of 1,094 million would have been created had the traffic moved by rail lines. In this district, shorter water distances resulted in a saving of 6 percent in ton miles.*

## XXI OVERALL COSTS

### 72. Carrier Investment in Freight Facilities

Railway

The amount or value of the investment upon which carriers will be permitted to earn a return - a highly controversial issue of the past two decades - has lost much of its former importance. The return which the railway can earn under existing conditions is much more to the point. The aggregate "book cost" of the railways now approximates the "value" for ratemaking purposes tentatively fixed. The eventual coincidence of the two was inevitable once a cut-off date was fixed, after which replacements were accounted for upon a uniform and consistent basis, since the great bulk of rail property is consumed in use and the plant practically renewed over the composite service life cycle of its units.

The capital invested in freight facilities of rail carriers is shown in analysis 1.1.

Waterway

The reported original cost of self-propelled vessels owned by respondents was $448,000,000, and of non-propelled vessels $30,000,000, making a total of $478,000,000. These vessels had been depreciated on the books of the reporting companies down to $271,000,000 for the self-propelled vessels and $23,000,000 for the non-propelled vessels, leaving a total book value as of June 30, 1933 of $294,000,000. The book value of all other property and equipment owned or leased by the reporting companies as of the same date was $39,000,000.# The balance sheets and other financial records of the reporting companies were of various forms. In some instances detailed figures were not furnished. Neither the total sums originally invested, nor the amount of available or needed working

* Analyses 70.2 and 70.3. # Exhibit 801.



capital, could be determined for all carriers. Comparable figures were obtained from companies who carried on their books as of June 30, 1933, $274,000,000, or 82 percent of the vessels and property owned. These companies reported as assets: Investment in property, fleet and equipment, less depreciation $274,000,000; investments, trust funds, and other cash working assets, $117,000,000; total $391,000,000. Their liabilities were: Capital stock $183,000,000; long term debt $99,000,000; current liabilities $45,000,000; surplus $64,000,000.*

It is extremely doubtful that the financial situation of the companies who owned the other 18 percent (in value) of the equipment is at all comparable with that of those companies who reported in detail, as most of the old established concerns were in the latter class.

### 72. Carrier Investment

Petroleum

All pipe line companies reporting to the Commission, for the year 1932, operated nearly 93,000 miles of trunk and gathering pipe lines representing a total investment of $764,000,000. The 12 companies comprising the North Atlantic Coast group had $55,000,000 invested in 14,700 miles of pipe lines; the 16 Great Lakes-Southwest carriers had $319,000,000 invested in 44,800 miles of line; and the 18 companies in the Southwest Gulf group operated 33,300 miles of trunk and gathering line, in which $390,000,000 was invested.#

Highway

The aggregate investment in highway vehicles used to transport freight is not known. This is not necessary, however, inasmuch as truck costs are computed on a vehicle unit basis, and the price of any highway freight vehicle is easily obtained. Manufacturers' published specification tables for 1926, 1928, 1930 and 1932 were used for price data.

The price of the vehicle will depend on whether it is a single unit or a tractor combination, the latter representing a saving in investment of approximately one third for similar capacity or gross weight. The cost data supplied by highway operators offered no evidence of an average saving in any item save interest on vehicle investment. Since the tractor-trailer combination rarely appears below the 3-ton capacity group and wholly makes up the groups above 10-ton capacity,

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* Report of Federal Coordinator of Transportation, 73rd Congress, 2nd Session, Senate Document 152, Appendix A.

\# Analysis 1.8.

a diagonal was drawn between the two price parallels from the 1-ton truck to the 20-ton combination. This in effect follows what actually takes place, by diminishing the importance of the truck in the composite and increasing the importance of the combination as the size increases. The resulting composite or average price may be stated thus:

$$\text{Price (less tires), dollars.} = 0.137\ (\text{gross weight, lbs.})^{1.04}$$

## 73. Cost of Capital Servicing

**Railway** An annual capital service charge of 5 percent upon the book value of railways amounts to almost $3,800 per mile of road, a sum greater than any other group of expenses.* Six times within the past 12 years the net earnings have equaled this amount.# In 1932 the earnings failed to do so by $1,430 per mile of road; but for the entire period it was earned exactly. Applied to the traffic units of 1932, it amounted to $2.34 per train mile; 8.9 cents per loaded car mile; and 3.9 mills per net ton mile. Applied to the average traffic units of the 12-year period it amounted to $1.65 per train mile; 6 cents per car mile; and 2.4 mills per net ton mile.ø

**Waterway** Dealing only with the reporting companies, a 5 percent return on capital stock and long term debt, which amounted to $282,000,000, would have been $14,000,000. The interest on the debt structure alone would have been $5,000,000. The industry, as a whole, suffered an operating loss of $10,500,000. In other words, the operations in 1932 were on a basis which failed by $15,500,000 of earning operating expenses and interest on long term debt and failed by $24,500,000 of earning operating expenses and a 5 percent return on capital stock and debt./ The reports indicated that only $2,500,000 of interest was paid in 1932, just about one half of the amount that accrued on a 5 percent basis.** The reports also showed that some of the older and larger companies at one time operated with very satisfactory results and had accumulated sizable surpluses. Thirty-eight of the companies paid dividends on their capital stock in 1932, in most cases out of surplus./

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* Analysis 73.1.
\# Analysis 3.2.
ø Analyses 3.1 and 3.2.
/ Report of Federal Coordinator of Transportation 73rd Congress, 2nd Session, Senate Document 152, Appendix A.
** Exhibit 804.



The freight proportion of investment of the companies who furnished detailed reports amounted to $357,000,000.* The freight operations of these companies in 1932 resulted in a deficit of $11,900,000.# A 5 percent return on the freight proportion of the investment of these companies would have amounted to $17,900,000. These companies in 1932 failed by almost $30,000,000 of earning operating expenses and a 5 percent return on their freight services.

**Petroleum** The net operating income of 46 pipe line companies operating in the United States aggregated in 1932 110 million dollars, 80 millions of which were earned in the operation of trunk lines, and about 30 millions were earned in gathering line operations. The return upon investment in 1932 was over 14 percent.

**Highway** Interest on investment in vehicles was computed at 3 percent. This represents the normal basis, it being a general rule for the operator to credit to this item income on the depreciation reserve.

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* Analysis 1.4.
\# Analysis 4.1.

## 74. Transportation Function Operations

### 75. Overall Cost of Transportation

Railway

Total rail freight operative costs (i.e., costs other than capital servicing) aggregated in 1932 not quite 2 billion dollars, which was equal to 8 thousand dollars per mile of road. Of this amount 40 percent was expended for maintenance of property, fixed and movable, a like amount for transportation and 20 percent for overhead.* Further breakdown of these amounts will be made in later sections.

This total freight cost was equal to $369 per train operated, $72.42 for each car originated and $3.04 for each ton of freight originated, $81 per train hour and $5 per train mile; 19 cents per loaded car mile; 8.3 mills per net ton mile; and 2.6 mills per gross ton mile.

Due to interterritorial movement of traffic, territorial costs are more indicative if confined to mileage comparisons. The total cost per train mile in New England was $6.42; in Trunk Line Territory $7.31; in Central Territory $5.40; in Pocahontas Territory $5.49; in Southeastern Territory $3.99; in Western Trunk Line Territory $4.31; in Southwestern Territory $3.72; in Pacific Northwest $4.30; and in Pacific Southwest $4.54. Costs per loaded car mile did not vary greatly from the general average of 19 cents. The highest cost was in New England and Trunk Line Territories, 23 cents; the lowest in Pacific Northwest Territory, 16 cents. The other territories closely approximated the average. The same is also true of the cost per net ton mile. The highest was New England Territory, 13.2 mills; the lowest Pocahontas Territory, 4.4 mills.

Waterway

The freight proportion of total operating expenses of the companies who reported in detail were segregated as between maintenance, transportation and overhead. The total freight expenses of these companies in 1932 were $131,500,000. For maintenance they expended $22,200,000 or 17 percent; for transportation $79,000,000 or 60 percent; and for overhead $30,300,000 or 23 percent.#

Common carrier total freight expenses were $109,500,000 of which $18,500,000 or 17 percent was maintenance, $63,900,000 or 58 percent for transportation; and $27,200,000 or 25 percent for overhead. Contract carriers expended a total $13,900,000 of which maintenance accounted for $2,100,000 or 15 percent, transportation $9,500,000 or 68 percent and overhead $2,300,000 or 17 percent. Private carriers spent for freight operations a total of $8,000,000.

* Analyses 75.1 and 75.4. # Analysis 75.1.



They incurred maintenance expenses of $1,500,000 or 19 percent; transportation costs of $5,700,000 or 71 percent; and spent for overhead $800,000 or 10 percent.*

In the Atlantic Coastwise and Inland District, common carriers spent a total of $23,400,000 of which $4,500,000 or 19 percent was for maintenance; $14,500,000 or 62 percent for transportation; and $4.400,000 or 19 percent for overhead. Contract and private carriers in this district spent a total of $4,300,000 of which maintenance was $900,000 or 21 percent; transportation $2,900,000 or 67 percent; and overhead $500,000 or 12 percent.#

In the Atlantic Gulf service, common carriers expended a total of $15,200,000. Of this $4,100,000 or 27 percent was for maintenance; $8,700,000 or 57 percent for transportation; and $2,300,000 or 15 percent for overhead. Contract and private carriers operating in this service spent a total of $994,000, made up of $224,000 or 23 percent for maintenance; $768,000 or 77 percent for transportation; and $3,000 or .3 percent for overhead.#

In the Intercoastal trade, total freight service expenditures of common carriers were $42,300,000, of which $5,000,000 or 12 percent was for maintenance; $24,900,000 or 59 percent for transportation; and $12,400,000 or 29 percent for overhead. Contract and private carriers in this trade spent a total of $318,000, of which $87,000 or 27 percent was for maintenance; $197,000 or 62 percent for transportation; and $33,000 or 10 percent for overhead.#

On the Inland Waterway-Mississippi System, common carriers spent a total of $8,100,000, of which $2,100,000 or 26 percent was for maintenance; $4,700,000 or 58 percent for transportation; and $1,400,000 or 17 percent for overhead. Contract and private carriers operating in this district reported expenditures of $472,000 made up of $70,000 or 15 percent for maintenance; $317,000 or 67 percent for transportation; and $86,000 or 18 percent for overhead.#

On the Great Lakes, common carriers spent a total of $8,300,000, of which $1,400,000 or 17 percent was for maintenance; $4,400,000 or 52 percent for transportation; and $2,600,000 or 31 percent for overhead. In this district, contract and private carriers spent a total of $15,100,000 made up of $2,300,000 or 15 percent for maintenance; $10,400,000 or 69 percent for transportation; and $2,400,000 or 16 percent for overhead.#

On the Pacific Coast, common carriers incurred total freight expenses of $12,300,000, of which $1,500,000 or 12 percent was for maintenance; $6,700,000 or 54 percent for transportation; and $4,000,000 or 33 percent for overhead;

* Analysis 75.1. # Analysis 75.2.

while contract and private carriers spent a total of $767,000 made up of $59,000 or 8 percent for maintenance; $612,000 or 80 percent for transportation; and $96,000 or 13 percent for overhead.*

In analysis 75.2 the function unit costs of common carriers and other carriers for each of the six regions are shown. These units are route mile, schedule, net ton, schedule hour, schedule mile, ton mile via rail distances and ton mile via water distances.

Petroleum

The maintenance expenses of operation of pipe line service in 1932 amounted to over 48 million dollars, of which roadway expenses aggregated nearly 29 million dollars. Power expenses absorbed nearly 15 million dollars and station expenses aggregated nearly 4 million dollars.# The transportation expenses of petroleum pipe lines in 1932 amounted to nearly 28 million dollars, of which over 17 million dollars were absorbed in movement costs, over 9 million dollars in assemblage costs and 1 1/2 million dollars in agency expense expenses.ø Overhead costs aggregated nearly 26 million dollars, of which nearly 10 million dollars were absorbed in administration costs and over 16 millions in taxes. ≠ Total operating expenses aggregated nearly 102 million dollars against total revenues of 212 millions, producing a net profit of about 110 million dollars.**

The 12 petroleum pipe lines operating in the North Atlantic section of the United States operated nearly 15 thousand miles of line and represented an investment of almost 55 million dollars. These lines originated over 2 3/4 million tons of traffic. They earned 6 1/2 million dollars in the operation of trunk lines and over 2 3/4 millions in revenues from the operation of gathering lines. The net operating income of these companies amounted to 2 1/2 million dollars. The trunk lines earned 2 1/2 million dollars and the gathering lines lost a little over 1 thousand dollars. These carriers earned, as a group, a return of 4.65 percent upon the gross investment in the lines. Sixteen interstate pipe lines operating in the Great Lakes - Southwest District operated nearly 45 thousand miles of pipe line, and represented a gross investment of 319 million dollars. These companies originated over 25 million tons of petroleum traffic and earned,in trunk line operation,over 76 1/2 million dollars and, in gathering line operation, over 21 1/2 million dollars. The aggregate net operating income of these lines in 1932 was nearly 49 3/4 million dollars, of which about 40 1/2 million dollars were earned in trunk line operation and about 9 1/4 million dollars in gathering line operation, producing a gross return upon investment of 15.57 percent.##

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* Analysis 75.2
ø Analysis 93.1.
** Analysis 4.1.
# Analysis 77.1.
≠ Analysis 100.1.
## Analysis 70.8.



Eighteen interstate pipe lines, operating in the Southwest-Gulf District, operated over 33 thousand miles of pipe line and represented a gross investment of nearly 390 million dollars. These companies originated almost 55 million tons of petroleum traffic and earned, in trunk line operation, over 71 million dollars and, in gathering line operation, over 33 million dollars. The aggregate net operating income of these lines was 57 1/2 million dollars, of which 37 1/2 million dollars were earned in trunk line operation, and about 20 million dollars in gathering line operation, producing a gross return upon the investment of 14.76 percent.*

The function costs, maintenance, transportation and overhead, of petroleum pipe line transportation in 1932 amounted to about 102 million dollars. This was equivalent to a ratio of about 48 percent of the revenue earned and about $1,100 per route mile of pipe line operated. This was equal to $1.23 per net ton of traffic originated and to 3.2 mills per net ton mile. Of these function costs, maintenance absorbed over 48 million dollars, a ratio 23 percent of the revenue earned, and $521 per route mile. This was equivalent to 58 cents per net ton originated and 1.5 mills per net ton mile.# Transportation expenses amounted to nearly 28 million dollars, or a ratio of 13 percent of the revenue earned. This was equivalent to $301 per route mile, 34 cents per net ton originated, and .9 mills per net ton mile. Overhead expenses aggregated nearly 25 3/4 million dollars, which was equivalent to 12 percent of the revenue earned. This amounted to $277 per route mile, 31 cents per net ton originated and .8 mills per net mile.#

Highway

Truck costs, as heretofore stated, were grouped into two categories - variable and fixed. These costs are shown in analysis 75.6, in detail. The method of determining fuel, lubrication and crew wages is shown in this section; interest in section 73; maintenance and depreciation in section 92; taxes in section 101; administration in section 102; and insurance in section 103.

Fuel cost data included gasoline taxes, and the interacting variations made the cost approach difficult. Gasoline price data applied to consumption seemed the more reliable method of determination. The Petroleum Institute maintains records of the average price of gasoline, excluding the tax, as of the first of each month in 50 representative cities throughout the country. The 12-month mean for 1932 for tank wagon price was 12.45 cents per gallon; 12.5 cents is employed in the calculations in analysis 75.6.

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* Analysis 70.8. # Analysis 75.1.

Average gasoline consumption is closely approximated by the equation:

$$\text{Gasoline consumption, gallons per mile} = 0.000310\ (\text{gross weight, lbs.})^{0.675}$$

A very close concentration about the line of averages was observed for all weight groupings from motor cycles of 500 pounds to gross loads of over 45,000 pounds. It satisfied a particular gross load movement of 144,000 pounds. It was checked with earlier American experience, and with contemporary Italian experience and found to be below each. It was checked with the tables used by General Motors Corporation representatives in estimating costs on new operations and found to be somewhat above. This, too, seemed consistent. Vehicle design is improving. The average vehicle in actual operation is somewhat older than four years. Its gasoline consumption would be greater than that of vehicle of present design. Its age, too, in terms of deterioration, would contribute.

The questionnaire data (analysis 75.5) were supplemented by additional consumption data, made available by other cost studies and through correspondence with fleet and special equipment operators who did not reply to the costs questionnaire. A summary of all the gasoline consumption information follows:

Gasoline Consumption, All Data

| Number and Type of Vehicles | Average Gross Weight, lbs. | Consumption in Gallons per Mile |
|---|---|---|
| 45,181 Motorcycles | 768 | .0275 |
| 11,913 Passenger Cars | 3,444 | .0734 |
| 1,888 Trucks | 3,829 | .0820 |
| 13,680 Trucks | 7,309 | .1292 |
| 10,737 Trucks | 12,731 | .1723 |
| 7,329 Trucks | 16,774 | .2413 |
| 3,252 Trucks | 23,563 | .2826 |
| 1,122 Trucks | 35,946 | .2794 |

In these data the 6 truck groups correspond to the gross weight groupings of analysis 75.6. The drop below the trend for the last group may be attributed to (1) a relatively greater number of line-haul vehicles in the group; (2) the tendency of estimates to be in round numbers of 4, and particularly 5 miles per gallon, when actually the mileage per gallon was perhaps nearer 3 or 3 1/2; and (3) better than average road and grade conditions where the greater part of this small group of heavy vehicles operated. The weighted average coefficient resulting from this entire body of data is used.



Gasoline consumption is influenced widely by many factors other than gross weight. Road surface conditions may add 50 percent, grade conditions 50 percent, speed increases 50 percent, stops per mile for delivery or traffic 50 percent, under inflation of tires 10 percent, and the auxiliary use of engine power for hoisting, etc., 10 percent. These increases are based on the tests indicated, but the percentage of increase has in each instance been picked with practical conditions, which an operator may be compelled to face, in mind. It is not the theoretical extreme.

Added to these uncontrollable factors will be other factors more or less within control. Idling time may add 10 percent, improper carburetor adjustments 50 percent, improper maintenance or old age 25 percent, climatic conditions 10 percent, and acceleration, deceleration and driver carelessness 10 percent. There may be others.

These may be cumulative. Operator experience indicated a 50 percent deviation from average consumption to be quite usual. Appropriate analysis should examine these deviations for standard deviation values. For the time being it is only necessary to recognize that in all these averages wide deviations do exist in actual operator experience.

Oil Consumption. The consumption of lubricating oil in quarts per mile will vary, in the opinion of experts, according to the following factors: Improper viscosity at operating temperature, plus 25 percent; design of engine, plus 250 percent; exceeding critical speed - though it has not been ascertained whether this is a practical consideration in motor truck operation - plus 250 percent; improper maintenance or old age, which implies improper combustion of fuel and the dilution of the lubricant with gasoline, plus 100 percent. Lack of dust filters and other preventive measures to keep foreign substances out of the lubricants is also a factor. Average consumption, however, may be expressed as:

$$\text{Oil consumption, quarts per mile} = 0.000222\ (\text{gross weight, lbs.})^{0.480}$$

Oil costs were taken directly from operator experience. The average cost per quart indicated was 14.47 cents. One cent was subtracted from this as the Federal tax and the 13.47 cents remaining were applied to consumption.

Tire costs were developed directly from operator experience. Scatter of data in experimental plots formed parallel lines which upon inspection were found to represent figures based upon arbitrary mileage life selections of 10,000 to 40,000 miles. Such arbitrary charges on the part of operators, may or may not agree with their actual experience. There are too many variables in tire wear to justify such

consistency in indicated mileage life. The tire, of course, supports the gross load and through it is transmitted all of the effort which moves the vehicle over the road. Consequently, tire wear is variable importantly with the ratio of the actual load being carried to the load for which it was designed, and it is variable with many other factors aside from gross load. The road surface, vehicle speed, slippage, impact and temperature conditions of the road surface, or the brake drums, are influences. Speed is important in that rolling resistance increases in a small way with it, and air resistance increases approximately according to its square. This piling up of resistance as the speed increases is reflected in tire wear, just as it is in gasoline consumption. As the engine must do the work that work must be done through the tire. Under or overinflation practically synonymous with loading, sudden temperature changes, improper adjustment or use of brakes, spring characteristics, wheel alignment, driver carelessness and improper maintenance are other factors. Round numbered mileage lives must, therefore, be estimates.

The slope of the logarithmic line was clearly indicated by fleets in which vehicles of different gross weights operated under more or less similar conditions. The smallest of the six groupings, representing metropolitan delivery vehicles for the most part, had a higher than average cost representing a very short mileage life for the tires. A curve fitted to the remaining points showed a somewhat excessive mileage life when checked against tire price. The curve adopted for all groups, resulting from a weighted, average coefficient, appears to be reasonable in this respect. It represents the equation:

$$\text{Tire cost, cents per mile} = 0.000222\ (\text{gross weight, lbs.})^{0.9}$$

Based on 1933 list prices to retail consumers, tire price may be related to average gross weight, thus:

$$\text{Tire price, dollars} = 0.006805\ (\text{gross weight, lbs.})^{1.15}$$

Discounts to fleets, however, are from 10 to 20 percent of list retail prices.

Driver's and driver's helpers' wages were so closely related to mileage compared to other things that they are here considered a mileage charge. In practice this will work out as such except in terminal operations where loading and unloading time and other truck delays result in very low mileages. The vehicle usually incurs no driver charge when not on duty.



For-hire drivers averaged 6 cents per mile, and private drivers 8 cents per mile, throughout the weight ranges. The difference in annual mileage, however, very nearly equalizes the annual cost for any particular weight group.

Driver's helpers, on the other hand, averaged 2 cents per mile, which needs some interpretation in view of the fact that all vehicles do not use helpers and the larger vehicles have greater helper requirements than the smaller ones.

Driver wage data were received for 11,194 trucks. Of these 1,238 furnished helper wage data.

| Group (Gross Weight) | Trucks Requiring Drivers | Trucks Requiring Driver's Helpers | Percent Requiring Helpers |
|---|---|---|---|
| Below 5,000 lbs. | 559 | 70 | 12.5* |
| 5,000 - 9,999 | 5,567 | 287 | 5.2 |
| 10,000 -14,999 | 2,556 | 295 | 11.5 |
| 15,000 -19,999 | 1,484 | 193 | 13.0 |
| 20,000 -24,999 | 402 | 117 | 29.1 |
| 25,000 and over | 626 | 276 | 44.1 |

On the basis of these percentages it was assumed that a definite percentage of the mileage of each vehicle should be charged with driver's helper expense. The average cost resulting from the table may be stated:

$$\text{Driver's helper expense, cents per mile} = 0.000020\ (\text{gross weight, lbs.})$$

The generalizations for fixed and variable license fees are:

$$\text{For-hire and private fixed fees, dollars} = 0.000013\ (\text{gross weight, lbs.})^{1.6}$$

$$\text{For-hire variable fees, dollars} = 0.0000056\ (\text{gross weight, lbs.})^{1.6}$$

Dividing the latter by the annual mileage per for-hire truck will yield the following equation:

$$\text{For-hire variable fees, cents per mile} = 0.000001\ (\text{gross weight, lbs.})^{1.2}$$

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* Delivery group.

In order to translate average costs of moving a particular load a given distance for purposes of comparison with the charges or costs of similar movement by rail (analyses 49.7 - 49.14), two important adjustments must be made. The first requires the segregation of terminal and line-haul costs and the elimination from truck costs of elements not present in the rail carload costs, such as loading and unloading at origin and destination. Since it is contemplated that truck loads comparable with rail carload movement would be picked up and delivered by the line-haul vehicle, station clerical and miscellaneous and platform charges should also be eliminated. The second adjustment requires a relation to be established between the particular load and the average gross weight of the vehicle, which may be accomplished for all loads and their average gross weights by a translation of the composite costs of for-hire trucks into an equation relating them to the weight of the load rather than to gross weight.

The questionnaire on per truck performance and cost data did not separate pick-up and delivery and other terminal expenses from items of general overhead. The motor truck survey questionnaire to which it was appended did, however, elicit more or less complete reports on terminal costs from 114 operators which revealed this item to be consistently close to 13.41 percent of total operating costs.

| Gross Expense Group, Dollars | Number of Concerns | Total Operating Costs, Dollars | Terminal Costs, Dollars | Terminal in Percent of Total Costs |
|---|---|---|---|---|
| Below 10,000 | 20 | 88,850 | 9,344 | 10.52 |
| 10,000 - 24,999 | 7 | 5,545,329 | 796,059 | 14.36 |
| 25,000 - 49,999 | 12 | 3,471,389 | 463,449 | 12.57 |
| 50,000 - 74,999 | 16 | 2,286,696 | 313,834 | 13.72 |
| 75,000 - 99,999 | 14 | 1,207,001 | 121,033 | 10.02 |
| 100,000 -199,999 | 10 | 594,376 | 78,321 | 13.18 |
| 200,000 -499,999 | 17 | 697,253 | 84,536 | 12.12 |
| Over 500,000 | 18 | 298,470 | 36,609 | 12.27 |
| All Operators | 114 | 14,189,364 | 1,903,185 | 13.41 |

These terminal expenses include the truck expense involved in pick-up and delivery representing approximately 33.84 percent, and terminal rental representing another 7.55



percent of the total terminal costs.* There remains 58.61 percent of the terminal, or 7.86 percent of the total operating costs as terminal expense to be deducted from average truck operating costs before the segregation of terminal and line-haul costs may be made.

Applying the total deduction to the fixed costs leaves a remainder which is closely approximated by the equation:

$$\text{Net fixed cost per day, cents} = 89.41 + 121.05\ (\text{load, tons})^{0.6}$$

Variable costs may be expressed in a similar equation, thus:

$$\text{Variable cost per mile, cents} = 7.6771 + 3.9434\ (\text{load, tons})^{0.6}$$

The load in both cases represents the manufacturer's allowable load, the assumption being that though empty mileage would bring the average load throughout the year's mileage down to normal, the particular load would exceed the rated capacity within the load limits of the chassis.

The terminal costs, under the expected conditions, may be obtained by (1) multiplying the fixed cost per working day by the time spent by the vehicle in the terminal operations expressed as a fraction of the working day, and (2) adding to this product the variable cost per mile multiplied by the vehicle mileage spent in the terminal operations.

The line-haul cost may be stated as (1) the fixed cost per day multiplied by the time spent in the haul, expressed as a fraction of the working day, and (2) added to the product of the variable cost per mile multiplied by the mileage traveled in the line-haul.

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* Studies by C. G. Anthony of the Motor Freight Terminal Company of California revealed truck costs, including driving expense, to be 69.27 percent of pick-up and delivery costs. Exhibit 117B of the Merchandise Traffic Report, 1934 Federal Coordinator of Transportation, shows the average pick-up or delivery expense to be 85.39 cents per ton, or 48.85 percent of the total terminal expense per ton at origin or destination. It also shows terminal rent to be 13.20 cents per ton, or 7.55 percent of the total expense per ton at origin or destination.

The total cost will be the sum of the terminal and line-haul costs and for any set of conditions may be expressed algebraically as follows:

$$C = F\left(\frac{T_t}{W}\right) + V(D_t) + F\left(\frac{T_r}{W}\right) + V(D_r)$$

wherein

C = Total cost of truck movement, cents,
F = Fixed cost per day, cents,
V = Variable cost per mile, cents,
$T_t$ = Time spent in terminal, hours,
$T_r$ = Time spent in road, hours,
$D_t$ = Distance run in terminal, miles,
$D_r$ = Distance run on road, miles
W = Working day, hours.

It appears that under conditions of truck load haul the time spent in the terminal will normally total two hours per trip and the terminal mileage will total close to 15 miles per trip and that the working day for the performance of such truck hauls will usually cover 18 hours.

Normal road speed may be estimated at 20 miles per hour, with allowance for road delays outside of terminal areas. This is neither in disagreement with the 17.35 miles per hour average reported by truck operators for the completion of their runs,* nor with the 13.99 miles per hour average reported by shippers for movement of their truck shipments.# Runs longer than 250 miles in the former case were performed at an average speed of 21.22 miles per hour and shipments of more than 250 miles were completed in the latter at an average overall speed of 14.93 miles per hour. If the differential be accepted as terminal time and the greater weight of slow terminal mileage allowed in runs of less than 250 miles, 20 miles per hour appears to be conservative for the actual road-haul speed.

If these values for terminal time, terminal mileage, average road speed and working day be substituted in the above equation for total cost, and the two cost equations be substituted for F and V, the whole equation may be expressed as follows:

$$C = L^{0.6}(72.6010 + 4.2797\ D_r) + 125.0909 + 7.9255D_r$$

This equation was employed in computations presented in analysis 49.6.

* Exhibit 117 R, Merchandise Traffic Report.
\# Analysis 20.1.



The foregoing presents costs in terms of manufacturer's allowable load for the average truck type. Its applicability depends on the relation established between the allowable load and average gross weight. This relation will vary, however, with the body type, since allowable load represents the difference between the maximum allowable gross weight of the vehicle and its load and the actual weight of the chassis and body. Since tank and van bodies, for example, will occupy a greater percentage of the gross load than will a light stake or rack body, the costs per ton of allowable net load will vary, though they will still conform closely in terms of gross weight.

In order to correct the foregoing cost formula so that it will reflect these changes in cost due to differences in body weight normal to different commodities, it remains merely to adjust the value of L by the amount by which the anticipated allowable load must be raised or lowered to make it equal to the average allowable load.

The allowable loads on which the average costs have been computed conform very closely to those permitted by the lightest body group, i.e., the rack, stake and box bodies. The heavier body groups in order are (1) the enclosed or panel group, (2) the van and tank group, and finally, (3) the refrigerated body group. The automobile hauler is a special type vehicle, quite standardized around a load of 4 small cars or 3 medium weight cars, the gross load being close to 22,000 pounds on the loaded trip and 10,000 pounds on the empty return.

Manufacturer data as to these body weights* were difficult to average according to rated capacity, and when the most plausible relations were derived they resulted in an extremely complex relation between the permitted loads and the load values for the stake, rack and box group used as the value L. However, the variety within each group warrants the following approximate substitutes for L in the cost formulas:

| | |
|---|---|
| Panel Body | 1.075L |
| Van or tank body | 1.1125L+0.25 |
| Refrigerator body | 1.2L+0.5 |

The heavier bodies increase the transportation cost per ton and are likewise more expensive. Their life, however, is perhaps compensatingly long, and in any case they represent but a fraction of the total depreciation which would also tend to mitigate any real difference in cost.

* Valuable information was furnished by Herbert Engemann, of the Sterrett Operating Service, Washington, D. C.

The load adjustments represent the perceptible effect of body types on costs. This effect has not been computed in the tabulations herein, because it is far within the range of deviations that will be present from myriad other causes.

## XXII CARRIER FIXED PLANT

### 76. Necessity for Carrier Fixed Plant

### 77. Cost of Maintaining Fixed Plant

Railway — Under the railway accounting system in effect in 1932, the cost of replacing worn-out or obsolete plants was included with the cost of repairs in practically all accounts, except the equipment accounts. For this reason it is necessary to consider maintenance as the cost of both repairs and depreciation (including retirements with the latter). Rail maintenance costs aggregated 40 percent of the total cost or over 3,200 per mile of route.* From a location standpoint they group into the cost of maintaining the roadway and operative structures, stations and wharves.

In 1932 rail expenditures for maintenance of roadway aggregated $940 per route mile, or 108 percent below the average expenditure of the 12-year period. This difference was due in part to actual deferment of the maintenance obligation, in part to lower labor and material costs, but chiefly, it is believed,to the reduction in the amount of the obligation itself because of reduced use and more intensive supervision by management. This appears from examination of the service unit costs. The average roadway maintenance cost amounted to $8.41 per car and 35 cents per ton of freight originated; 58 cents per train mile and 2.2 cents per loaded car mile. These costs were somewhat lower than comparable costs for the 12-year average. Among the rate territories, the highest roadway maintenance cost per car mile was found in New England,3.0 cents, and the lowest in Pacific Southwest, 1.8 cents.#

Maintenance of stations and wharves in 1932 were relatively minor matters, amounting only to $56 per route mile.

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* Analysis 75.4.

# Analyses 77.2 and 3.4.



Station maintenance per route mile was quite subnormal, being but 45 percent of the 12-year average. The average cost per car originated in 1932 was 34 cents, compared with 48 cents over the 12-year period.*

Waterway — Reporting carriers who owned their terminals spent in 1932,$2,200,000 for maintenance of such properties. This amounted to 1.7 percent of total freight operating expenditures and 10 percent of total maintenance expenses. Common carriers spent $2,100,000 for maintenance of owned terminals, which was 1.9 percent of common carriers' total expenditures, and 11.4 percent of their maintenance expenses. Contract and private carriers reported very insignificant amounts for maintenance of owned terminals, their expenditures being $9,000 and $15,000, respectively. For private carriers this amounted to 1 percent of their maintenance expenses, while for contract carriers it amounted to less than .3 percent of maintenance expenses. In both instances the percentages of total freight expenses were but a small fraction of 1 percent.#

Expenditures for the use of terminal facilities on a wharfage or dockage basis amounted to $2,000,000. This item was 1.5 percent of total freight expenses and 9 percent of total maintenance expenditures. Common carriers incurred expenditures of this class amounting to $1,900,000, which was 1.7 percent of their total expenses and 10.1 percent of their total maintenance expenditures. Contract carriers spent $80,000 for wharfage and dockage, which was .6 percent of their total expenditures and 3.8 percent of their total maintenance expenses, while private carriers spent $34,000, which was .4 percent of their total freight expenditures and 2.2 percent of their total maintenance expenses.#

Maintenance of terminal facilities and percentages of total expenses and of maintenance expenses for the various classes of carriers by districts for the year 1932 were - Atlantic Coastwise and Inland common carriers $871,000 or 3.7 percent and 19.5 percent; others $1,000 or .02 percent and .1 percent; Atlantic Gulf common $375,000 or 2.5 percent and 9 percent; Intercoastal common $493,000 or 1.2 percent and 9.9 percent; others $14,000 or 4.3 percent and 15.7 percent; Inland Waterways common $284,000 or 3.5 percent and 13.7 percent; Great Lakes common $67,000 or .8 percent and 4.9 percent; others $9,000 or .06 percent and .4 percent; and Pacific Coast common $48,000 or .4 percent and 3.2 percent.ø

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* Analyses 77.2 and 3.4.
# Analysis 77.1.
ø Analysis 77.3.

Wharfage and dockage paid and percents of total freight expenditures and of maintenance expenses by classes of carriers by districts in 1932 were - Atlantic Coast common $284,000 or 1.2 percent and 6.4 percent, others $69,000 or 1.6 percent and 7.3 percent; Atlantic Gulf common $848,000 or 5.6 percent and 20.5 percent; Intercoastal common $327,000 or .8 percent and 6.6 percent; others $23,000 or 7.2 percent and 26.3 percent; Inland Waterways common $185,000 or 2.3 percent and 8.9 percent; others $700 or .2 percent and 1 percent; Great Lakes common $99,000 or 1.2 percent and 7.2 percent; others $21,000 or .1 percent and .9 percent; and Pacific Coast common $135,000 or 1.1 percent and 9 percent; others $100 or .02 percent and .2 percent.*

Maintenance unit costs are shown on analysis 77.3. The units used are route miles, schedules, net tons, schedule hours, schedule miles, ton miles using rail distances, and ton miles using water distances.

Petroleum — The maintenance cost of petroleum pipe line transportation in the United States in 1932 amounted to over 48 million dollars, representing a ratio of maintenance to revenue of 23 percent. This represented a route mile maintenance cost of $521 per pipe line route mile, 58 cents per net ton of traffic originated and 1.5 mills per net ton mile.#

## XXIII TRANSPORT POWER

### 78. The Problem

### 79. Capacity of Transport Power

Railway — The power capacity of American railways depends on many factors other than the tractive effort of the locomotives employed, some of which are grade, alignment, traffic balance, speed, daily utilization and mileage between general shoppings - each of which must be weighted with respect to the distribution and character of the traffic handled. A theoretical capacity based upon average tractive effort, gradient, curvature and speed, if the latter characteristics could be weighted, might prove misleading.

Average power capacity, gauged by the conditions which persisted in 1932, can be appraised. In 1932 there were 31 thousand road freight locomotives. Fifty thousand serviceable miles per locomotive per year appears to be the maximum average attainable with present power, and under present

* Analysis 77.3. # Analysis 77.1.



operating conditions and methods.* The largest average load of recent years was obtained in 1929 when a load of 757 net tons per freight locomotive mile was reached. The total average capacity upon this basis of the 1932 supply of locomotives would be about 1,000 billion net ton miles, or twice the 1929 peak and four times the 1932 traffic.

Waterway — Ton-mile capacities for the year 1932 were computed for reporting companies using the number of trips only that were made by each vessel during that year. No allowance was made for possible trips which could have been made had each vessel been in continuous operation during the entire season or year. For all reported waterline services a capacity of 115 billion ton miles was indicated. Ton miles of service performed amounted to 53 billions, or 46 percent of capacity. Common carriers had a capacity of 74 billion ton miles and utilized 33 billion or 44 percent. Contract carriers had a capacity of 24 billion ton miles of which 16 billion or 67 percent were utilized, while for private carriers the figures were 17 billion capacity and 4 billion or about 25 percent utilization.#

In the Atlantic Coast district, reporting common carriers had a capacity of 9,080 million ton miles and service performed amounted to 1,989 million, or 22 percent. In this district, reporting contract and private carriers had a capacity of 3,864 million ton miles of which 2,179 million, or 56 percent, were utilized.ø

In the Atlantic Gulf service, the ton-mile capacity of common carriers was 11,617 million of which 3,390 million, or 29 percent, were used; and other carriers had a capacity of 1,828 million ton miles of which 986 million, or 54 percent, were utilized.ø

In the Intercoastal trade, common carriers had a capacity of 41,506 million ton miles and used 22,880 million, or 55 percent. Other carriers engaged in this trade had a capacity of 903 million ton miles of which 289 million, or 32 percent, were utilized.ø

On the Inland Waterways, the ton-mile capacity of common carriers was 4,882 million and their utilization was 2,367 million, or 48 percent, while other carriers in this district had a capacity of 1,400 million ton miles and used 643 million, or 46 percent.ø

* Based on an average utilization of 10 hours per serviceable day (in October 1920 it reached 9 hours) a speed of 16 miles per hour (1932 average) and 312 serviceable days per year.
# Analysis 70.1.
ø Analyses 70.2 and 70.3.

On the Great Lakes, common carriers had a capacity of 5,053 million ton miles of which 1,284 million or 25 percent were used. Other carriers in this district had a capacity of 32,423 million ton miles and utilized 15,888 million or 49 percent.*

On the Pacific Coast, the ton-mile capacity of common carriers was 2,117 million of which 962 million or 45 percent were used and other carriers had a capacity of 400 million and a utilization of 66 million or 17 percent.*

## 80. Cost of Maintaining Transport Power

**Railway** The unit cost of total power maintenance in 1932 was only slightly subnormal, being 52 cents per train mile, compared with 67 cents over the 12-year period. The cost in 1932 amounted to 2 cents per loaded car mile. The highest unit maintenance cost was found in Trunk Line Territory, where it was $11.53 per train hour, 83 cents per train mile, 2.6 cents per loaded car mile and .35 mills per gross ton mile. The lowest was in the Southwestern Territory, $6.36 per train hour, 37 cents per train mile, 1.7 cents per car mile and .24 mills per gross ton mile.# Among the classes of trains, the lowest cost was found in the branch line way freight, handling an average of only 8 cars or 667 gross tons, where road power maintenance averaged 22 cents per train mile. The highest cost was found on the heavily loaded manifest train, averaging 2,123 gross tons, at 44 cents per train mile. The lowest average cost - about 20 cents per train mile - was found in the case of branch line way trains in Central (average load of 764 gross tons); Western Trunk Line (567 gross tons); Southwestern (651 gross tons); and Pacific Northwest (579 gross tons). The highest average cost - 65 cents per train mile - was found in main line manifest trains of Trunk Line for trains handling an average load of 2,983 gross tons.ø

* Analyses 70.2 and 70.3. # Analyses 77.2 and 3.4.

ø In the inquiry the carriers were asked to apportion the cost of power maintenance between classes of trains and in cases where direct allocation was impossible, upon the basis of gross ton miles. The cost of power maintenance distributed upon this basis is shown in analysis 80.1. This basis of apportionment has been criticized (and, we are convinced, correctly criticized) because it assumes perfect adjustment of load and capacity and thereby throws undue cost on the heavier loaded trains. Since the carriers furnished the gross ton miles both including and excluding the weight of locomotive, it was possible to redistribute the cost between classes of trains upon a locomotive ton mile basis, which was done and is shown in analysis 80.2. The costs stated in the text in paragraph 80 are those computed upon the latter basis, but in all subsequent paragraphs and analyses dealing with road costs as a whole, the original distribution made in the returns upon a gross ton mile has not been disturbed.



**Petroleum** Power maintenance expense of petroleum pipe line companies in 1932 amounted to 15 million dollars which was 7 percent of the revenue earned, amounted to $162 per route mile and represented an expense of 18 cents per net ton originated and of .5 mills per net ton mile. Station expenses of petroleum pipe line companies amounted to 4 million dollars, a ratio of 2 percent of the revenue earned. This represented a maintenance expense of $43 per route mile and 5 cents per net ton originated. This was equivalent to station maintenance costs of .1 mill per net ton mile.*

## 81. Modernization of Transport Power

**Power** The basic requirements for modern power were taken to be: (1) Reduction and elimination of terminal handling where possible; (2) providing fast, light-weight, frequent local freight train service, through container power cars as standard equipment; (3) localizing or decentralizing truck operation through collection and delivery service, trucking of exceptional traffics, railhead distribution for direct highway transport; (4) power equipment with low first cost and low operating and maintenance cost.

The manufacturers, therefore, were requested to submit proposals generally complying with the following specifications:

### Motive Power Equipment

1. Speed - 60 M.P.H. on straight level track, with load and gross trailing load as specified.

2. Power container car, double truck, steel or equivalent throughout, with control cab or engine room at one or both ends of unit, back of which, or between control cabs or engine rooms, will be a clear platform space, varying from 20, 29, 34 to 42 feet for loading 2, 3, 4 and 5 containers, plus additional length for bumper and other A.A.R. requirements.

3. Locomotive, double truck, mechanical parts steel or equivalent, with control cab built in center of unit.

4. Containers to be transported were in two general sizes:

* Analysis 77.1.

Small Container - 8' x 8' x 10' capacity
25,000 pounds; Tare - 3,500 pounds.

Large Container - 8' x 8' x 20' capacity
50,000 pounds; Tare - 6,500 pounds.

The proposals of the manufacturers are summarized in three analyses: 81.1 Power Cars, all prime movers; 81.2 Steam Locomotives; 81.3 Diesel-Electric and Diesel-Mechanical Locomotives.

Power cars were considered for this study, built to haul containers 8' x 8' x 10' weighing, loaded, 28,500 pounds, each with a tare weight of 3,500 pounds, placed transversely across the car width and four inches apart, making the container power car take the form primarily of a flat car with an operating cab at one or both ends, depending upon the characteristics of the service in which the car would be operated.

These power cars also were to be capable of hauling two or more trailers on straight level track at a maximum sustained speed of 60 miles per hour, with trailing loads as high as 500 tons gross.

The condition was considered where a power car might not have a container load, thus all the weight of the power plant, plus the fuel and water tanks, have been placed over the power truck, in order to secure ample starting adhesion. As soon as the speed of a few miles per hour is attained, one axle will give all the tractive effort required, but usually, of course, there are two axles powered.

Since these cars are primarily for high speed service, little tractive effort is needed at low speeds. With roller bearings used on these and on trailing container cars, the tractive effort necessary for the so called "break-away" will not necessarily be required. Even with slippery rails, by using sanders, these power cars would have ample tractive effort to start a train twice as heavy as they can pull at high speed.

In this design it was found entirely unnecessary for the light weight type of power plant used to sacrifice the pay load, which could be carried chiefly on necessary second or trailer truck. In power units of less than 2,000 horsepower, the dead weight of a separate locomotive would prove an unnecessary expense, both from the standpoint of first and operating cost, not to mention the fact that if a separate locomotive be used, increased horsepower would be necessary and considerable dead weight would have to be added to the frame.



Proposals for these cars and estimated performance and expense data are summarized in analysis 81.1. Manufacturers' submissions follow:

Automatic Gear Corporation

One 60-ton, 400-h.p., four-container power car with crew quarters; equipped with two 200-h.p. pancake engines, automatic gears and clutches; has raised operating cab and is arranged for operation in either direction.

Besler Systems

Four-container, 280-h.p. Diesel-Mechanical power car equipped with two 140-h.p. Diesel engines and mechanical transmission.

Four-container, 500-h.p. steam power car equipped with high-pressure steam generating plant and engines.

Four-container, 1,000-h.p. steam power car equipped with high-pressure steam generating plant and engines.

J. G. Brill Company

Four designs of container cars of various capacities, using gasoline engines with mechanical drive.

A. K. Brumbaugh

Hydraulic-Mechanical Drive container car with gantry crane; equipped with two Diesel engines and "fluid flywheel" clutches.

Clark Equipment Company

35-ton, five-container car equipped with two 285-h.p. ignition injection, Diesel engines and Turbo-Hydraulic Drive.

Electro-Motive Corporation

Two, three, four and five-container Diesel-Electric power cars.

Four-Wheel Drive Auto Company

High-speed freight tractor equipped with one 250-h.p. Diesel engine with all-mechanical transmission.

Ingersoll-Rand Company

Three-container power car equipped with a 530-h.p. Diesel engine and electrical equipment.

Mid-West Locomotive Works

45-ton carrying capacity (30-ton light-weight) Diesel Hydraulic-Mechanical driven freight motor power car, equipped with one 400-h.p. Diesel railway type engine, capable of a maximum speed of 60 miles per hour.

50-ton carrying capacity Diesel Hydraulic-Mechanical driven freight power car equipped with two 265-h.p. Diesel railway motors. Maximum speed 60 miles per hour.

60-ton carrying capacity (40-ton light-weight) Diesel Hydraulic-Mechanical driven freight power car, equipped with two 265-h.p. Diesel railway engines. Maximum speed 60 miles per hour.

75-ton carrying capacity (50-ton light-weight) Diesel Hydraulic-Mechanical driven freight power car, equipped with two 400-h.p. Diesel railway motors. Maximum speed 60 miles per hour.

Jaray Streamline Corporation - (Brown Gurney Engineers)

Six-container, 700-h.p. Diesel-Mechanical power car equipped with five 140-h.p. Diesel engines and mechanical transmission.

Linderman Devices, Inc.

One-container car design for four containers (57 gross tons) equipped with two 200-h.p. Diesel engines and Linderman selective railcar transmission. Cars up to 1,000-h.p. can be built with this transmission.

Ryan Car Company

Two, three and four-container 500-h.p. steam power cars, equipped with high-pressure steam generating plant and uni-flow engines.

Five-container, 1,000-h.p., steam power car equipped with high-pressure steam generating plant and uni-flow engines.

Westinghouse Electric and Manufacturing Company

Five-container power car equipped with a 530-h.p. Diesel engine and electrical equipment.

Utility of Single Car (Container) Units

Inherent operating economies which are possible with container power cars are not to be found in other types of motive power units, as is shown by the operating costs in analysis 81.4 et seq.



Cost Data - Single Car Container Units

| Cost | Containers | Weight | B.H.P. | Cost Per Pound | Cost Per B.H.P. | Weight Per B.H.P. |
|---|---|---|---|---|---|---|
| | | Double-Truck Diesel-Electric | | | | |
| $40,000 | 3 | 131,500 | 530 | $0.304 | $75.50 | 328 |
| 50,000 | 5 | 115,000 | 530 | 0.435 | 84.60 | 217 |
| | | Double-Truck Steam | | | | |
| $40,000 | 4 | 70,000 | 500 | $0.573 | $80.00 | 140 |
| 47,000 | 2 | 120,000 | 500 | 0.392 | 94.00 | 240 |
| 49,000 | 3 | 130,000 | 500 | 0.377 | 98.00 | 260 |
| 51,000 | 4 | 140,000 | 1,000 | 0.365 | 51.00 | 140 |
| 60,000 | 4 | 75,000 | 1,000 | 0.800 | 60.00 | 75 |
| | | Double-Truck Diesel-Mechanical | | | | |
| $42,500 | 4 | 54,000 | 400 | $0.785 | $106.00 | 135 |
| 18,750 | 4 | 66,000 | 280 | 0.284 | 67.00 | 235 |
| 25,000 | 4 | 52,000 | 400 | 0.480 | 62.50 | 130 |
| 32,775 | 6 | 79,000 | 700 | 0.414 | 46.80 | 113 |
| 28,000 | 5 (Hydr) | 70,000 | 570 | 0.400 | 49.00 | 123 |

Steam. Some builders were in a position to submit locomotives that might be used for the higher tonnages; namely, 500 tons gross trailing load at a sustained speed of 60 miles per hour on straight level track. However, this type of unit could only be used where there was sufficient traffic density to warrant capital investment necessary to secure such motive power, and its required auxiliary facilities.

Experience with central stations, industrial plants, and with new types of locomotives has demonstrated the soundness of the general trend toward higher steam pressures. The expected economies have been realized, and the day of high pressure steam power plants has arrived.

To secure the advantages of steam motive power, an entirely new type of unit was developed for this study; namely, the use of the booster type - or auxiliary type locomotive. These are proposed to be used under a platform type of construction with a car or an electric locomotive type cab and body for carrying the high pressure steam generating plant and condensing equipment, using one booster locomotive truck to meet some conditions, and two trucks for others. This unit will be capable of operating at a maximum sustained speed of 60 miles per hour on a straight level track, with tonnages varying from 100 tons to 500 tons gross trailing load, and as high as 1,000 tons at 35 miles per hour.

Submissions by manufacturers follow:

The Baldwin Locomotive Works - Three conventional steam locomotives were submitted of the 4-4-0 type with tonnage capacities of 150, 300 and 500 gross tons at 50 m.p.h., - maximum speed 60 m.p.h.

Bethlehem Steel Company - Here the booster or auxiliary type of locomotive trucks are built into a transportation unit with either two booster or power trucks; or one booster or power truck and one auxiliary power truck, under a box type of electric locomotive body housing the steam generating and condensing plants.

Four types of units were submitted:

1. Two power trucks with four wheels, 42" in diameter and 12" x 11" cylinders with proper gear ratio. The trucks of this locomotive unit would have a permanently connected gear drive and would be used for high-speed service, being provided with two cut-offs, 70 percent and 35 percent. Weight of complete power unit 190,000 pounds.

2. One power truck and one auxiliary power truck with four wheels, 42" in diameter, and 10" x 11" cylinders with proper gear ratio. This locomotive unit would have use of the auxiliary truck for starting purposes and for acceleration up to 30 miles per hour since the auxiliary truck would have a fixed cut-off of 70 percent. Then the power truck, with a horsepower of 481, would be able to handle train after starting up to 60 m.p.h. at 70 percent cut-off. Weight of complete power unit 190,000 pounds.

3. Two power trucks similar to those used in No. 1, except that they would have three pairs of wheels, since this type would be used for heavy axle load. Weight of complete power unit 200,000 pounds.

4. One power truck and one auxiliary power truck similar to unit under No. 2, except that they would have three pairs of wheels, and the auxiliary power truck would be used for starting and acceleration. Weight of complete power unit 200,000 pounds.

Besler Systems - High-Pressure Steam Power Plants - The general plan behind equipment submitted includes the use of multiples of the same unit for steam operation. An exception is the engine for the locomotive type, which may have two power trucks, such as would be placed under one end of the baggage or express car to be converted, which is included in this study; or, as indicated, with gear ratios permitting greater speed than is usual for switching.



These power trucks constitute a feature which can be used to advantage by the railway operator, at the same time permitting quantity production and utilization, thus assisting in lowering the first cost, as well as simplifying and cheapening the service and maintenance required.

Although all the steam power plants herein included are designed to burn oil, a suitable boiler has been developed and already extensively used in Europe, which can burn coal; namely, the Woolnough type of boiler. From recent developments, a successful means of burning coal or powdered coal could be quickly developed for the standard type of boiler herein specified, in the event there be a demand. This demand would be inevitable if a very large number of these units should be desired, as there are certain districts in the United States wherein, except for passenger cars, the use of oil would not only be uneconomical, but contrary to the spirit of the inhabitants to burn other than coal.

The following power units were submitted by Besler Systems:

1,000-H.P. High-pressure Steam Railcar Conversion Unit.

500-H.P. High-pressure Steam Railcar Conversion Unit.

1,000 and 2,000-H.P. High-pressure Steam Switching and Road Locomotives.

La Mont Corporation - High-pressure Steam Power Cars and Streamlined Trains. The motive power units submitted incorporating the La Mont steam generator are as follows:

1. High-pressure steam generating plant in conjunction with a General Electric turbo-electric generator, which in turn furnishes power to electric railway motors on the traction or power trucks.

2. High-pressure steam generating plant with American Locomotive compound condensing engines on the power trucks.

3. High-pressure steam generating plant with Bethlehem Steel Company "Booster" type simple engines on power trucks.

These types of power units are particularly well adapted to rail power car or high-speed streamlined train service. The La Mont System of steam generation, due to its being based on controlled forced circulation by the use of orifices, makes possible the use of smaller tubes with thin walls, therefore resulting in a compact steam boiler plant of lighter weight, greater economy and high efficiency. Being symmetrical in design, this system lends itself to a variety of applications, which can be met by a low initial cost, as well as low maintenance, especially with the condensing unit.

Lima Locomotive Works, Incorporated - Four designs of steam locomotives, handling trains up to 500 tons gross weight, were submitted.

A double end locomotive of the 4-4-0 type, in which a separate tender is dispensed with and the water and fuel are carried in side tanks and on the rear truck, was one recommendation. Very careful attention was given to the necessity of reducing the length of time at terminals, and it was for this reason that the double end locomotive was recommended, as it would avoid the necessity of "turning".

In addition to reducing the time at terminals, it was also considered that in speeding up the operation rapid acceleration was essential. Thus, the booster locomotive was provided, the tractive power of the main cylinders being 26,300 pounds, and the tractive power of the booster being 34,800 pounds. Undoubtedly, a locomotive of this type on secondary or branch lines, where fairly substantial grades might be encountered, with the booster added to the unit, would be of tremendous value in handling trains over these grades.

The Ryan Car Company - Ryan Locomotor - The Ryan Locomotor power plant is so compact as to permit its installation in a dozen feet of space in an ordinary railroad car. This is due to its ability to burn its fuel in small space, and burn it completely; to its ability to manufacture steam as fast as it is demanded without the necessary storing of large volume; and to the high-pressure temperature of its steam.

Condensing arrangements remove the necessity of carrying a large water supply, the water being used over and over again. It is operated by one man with controls familiar to every locomotive engineer.

The Locomotor type of motive power unit accentuates the economy possible for motor cars on branch lines of steam railroads, and due to its high efficiency and compactness of power plant makes it possible to haul trains of standard cars on main lines as well as on branch lines.

Each axle of a power truck is equipped with an eight-cylinder uni-flow poppet valve steam engine. It operates on less than eleven pounds of steam per horsepower hour.

The design submitted incorporating the principles of Locomotor has a total capacity of 1,000-H.P.; road type of Locomotor, equipped with two 500-H.P. engines, geared for 50 m.p.h., and capable of trailing 500 tons gross.



Utility of Small Steam Locomotives

Of the steam units submitted those with engines built into each truck (which acts not only as a traction truck but as a supporting truck for the locomotive body with its steam generating and condensing plants) are the most practical of the locomotive type units. These will very effectively meet the requirements of this study because of (1) low first cost; (2) low operating cost; (3) low maintenance cost; (4) power trucks quickly removable; (5) large number of parts interchangeable; (6) high availability; and (7) possibility of simplifying engine terminals.

Cost Data - Small Steam Power Units

Locomotive Type (Double-Truck)

| Cost | Weight | B.H.P. | Cost Per Pound | Cost Per B.H.P. | Weight Per B.H.P. |
|---|---|---|---|---|---|
| $85,000 | 240,000 | 2,000 | $0.353 | $42.50 | 120 |
| 75,000 | 170,000 | 1,000 | 0.430 | 75.00 | 170 |
| 35,000 | 100,000 | 962 | 0.350 | 36.40 | 103 |
| 35,000 | 100,000 | 735 | 0.350 | 47.60 | 103 |

Diesel-Electric. Long before James Watt constructed his crude atmospheric engine - before the early beginnings of steam power as we know it today - scientists had already suggested that useful work might be accomplished by exploding gunpoweer in a closed vessel. It was only after the steam engine and the steam turbine were developed to high economy that engineers, reaching out for still higher economies, turned again to the internal combustion motor. Today industry is just beginning to appreciate the possibilities offered by oil engine power, and to concede to internal combustion engines their rightful place among prime movers.

When Dr. Rudolph Diesel came into the field, gas engines, gasoline engines, oil engines had found their way into many industries. They were fairly economical, generally reliable, but not unfailing prime movers. They were single-acting and double-acting, horizontal and vertical; they utilized two-stroke and four-stroke cycles.

The many disappointments during the early development of the Diesel are a matter of history. Still, the economy promised by the Diesel heat cycle made concerted efforts along the right lines inevitable, and the matter of reliability was only a question of time.

The growth of the Diesel industry has been phenomenal. In the United States, for example, the first Diesel engine was introduced in 1898 by Adolphus Busch. Four years later, in 1902, the first Diesel central station was constructed. From then until 1913, the development was slow, but when the Diesel patents expired, and the ideas proposed in them became public property, the time was ripe for intense activity.

At that time (1913) the total annual Diesel horsepower turned out in this country approximated only ten thousand. Today, we have over five million five hundred thousand Diesel horsepower operating in the United States.

In Europe, developments within the last ten years have been fundamental in shaping the fast crystallization of Diesel railway operation throughout the British Empire and Continental Europe. Here the small Diesel-Electric or Diesel-Mechanical drive is to be found in capacities of 85 to 100-b.h.p. per car, which was generally influenced by the two-axle motor car. Today, we find an approach where American operating demands begin; namely, 410-b.h.p., supercharged to 600-b.h.p.

In the United States, the Diesel engine, built or mounted on the car truck with an electric generator or mechanical drive, as in daily use in Europe, is generally unknown. In British practice it has become common to not only mount the power plant and transmission equipment on the car trucks, but to also fasten it on the underframe of the car body.

Also, due to the desirability of making railway motor trucks interchangeable, so as not to hold equipment out of service, there has been developed in Europe a definite trend for placing engine and transmission all on the power truck, be it mechanical, hydraulic or electric type. The most recent installation of this type is a 600-h.p. Maybach engine with Voith hydraulic transmission, placed in the motor truck of one of the "Flying Hamburgers". The control engine and hydraulic transmission equipment weigh approximately 20,000 pounds.

Among the outstanding Diesel railway engines found in Europe are -

| | Cylinders | B.H.P. | R.P.M. |
|---|---|---|---|
| Mercedes-Benz | 12- "V" | 330 | 1,700 |
| Beardmore | 6 | 225 | 1,200 |
| Renault | 12 | 300 | 1,500 |
| Renault | 16 | 500 | 1,500 |
| Maybach | 12- "V" | *410 | 1,400 |
| A.E.C. | 6 | 130 | 2,400 |

* Supercharged to 600-B.H.P.



The Mercedes-Benz and Maybach engines are used on the German State Railways, while the Renault engines are used on the French State Railways, and the A.E.C. engines by the Great Western Railway of England, two engines per car.

Diesel power for railway propulsion has been used for a period of scarcely over ten years in the United States, at first very much in an experimental stage, and now made commercially possible through the development of the Diesel-Electric locomotive, the Diesel-Electric passenger railcar and the streamlined train; latest practice to be found in the "Comet" of the New Haven System with a power plant at each end of the train.

However, the high cost of such equipment as developed in its present form precludes its extensive use as an immediate aid from the standpoint of increased revenue and low capital investment.

In the United States the Diesel-Electric power equipment has taken on the general conventional form of the mechanical parts as used for electric locomotives, as well as that of the heavy baggage, express, or passenger car type of construction. All Diesel equipment, being of electrical transmission type, the complete power plant is housed up in the carbody or locomotive cab in its own engine room.

While the extensive application of the internal combustion engine to various modes of transportation has been outstandingly successful, the exacting demands of railway operation require a special type of engine. The gasoline engine is rapidly giving place to the modernized Diesel engine, because of the latter's lower fuel consumption and minimized fire risk characteristics. At the same time, it has been found necessary to especially design a Diesel type railway engine in various forms from the standpoint of the railway operator as well as the engine manufacturer.

In the early development of the Diesel railway engine, it was found that an ideal type of engine would be one that, to a certain extent, embodied the general performance characteristics of both submarine and airplane engines, as well as include some of the constructional design features from the standpoint of light weight, and yet retain sufficient ruggedness.

Power for railway operation must always be supplied in a sufficient quantity, and thus it is highly necessary to build engines with enough horsepower capacity to enable securing an excess per train horsepower capacity, insuring longer engine life. After a railcar or motor train has been accelerated in making a main line run with few stops, properly

engined it will have an excess horsepower capacity. But when it starts operating on the branch line part of its run, with frequent starts and stops, this excess power permits safe operation without damage to engine equipment, thus keeping maintenance low.

The above is of prime consideration in the design of a Diesel railway engine. Many early types have been found to be of short life, conducive to high maintenance, because experience had not dictated building engines large enough to secure excess capacity, either for single or multiple engine equipment.

While the Diesel railway engine has been confined to 100, 175, or 180 horsepower for a number of years, the change in economic conditions has accelerated this development and complete steam train services have had to be replaced with railcars or motor trains which require greater engine unit horsepower. Thus engines of 200, 300, 350, 410 and 500 horsepower capacity are now available for mounting on the car truck or upon the frame inside the car for mechanical, hydraulic and electrical transmissions. And these, in turn, are used in multiples to give the higher power, or total train engine capacity.

With the type of electrical transmission where the complete power plant is mounted inside the power car or locomotive body, engine capacities range from 300, 600, 900 to 1,200 horsepower, multiples of which are combined to increase the total capacity.

While the thermal efficiency of the steam locomotive operating at full load is approximately 7 percent, in actual service its efficiency would drop to approximately 3 percent. Under full load conditions the efficiency of a Diesel-Electric locomotive is approximately 3 1/2 times that of the steam locomotive when operating under the same conditions. In actual service where the load varies, making it necessary to vary the rate at which the coal is burned on a steam locomotive, the efficiency of the Diesel engine is approximately 6 times that of the steam engine.

Under full load conditions on the Diesel-Electric locomotive, the energy represented by the heat stored in the fuel is dissipated as follows:

| | Fully Loaded Percent | Average Loading Percent |
|---|---|---|
| Engine Exhaust | 33.0 | 36.0 |
| Engine Cooling Water | 33.0 | 36.0 |
| Locomotive Auxiliaries | 3.0 | 4.0 |
| Loss in Electrical Transmission | 5.0 | 6.0 |
| Available for useful work | 26.0 | 18.0 |



The electric transmission on a Diesel locomotive consists of an electric generator, driven directly by a Diesel engine, and an electric motor geared to each axle, the same as on the familiar street car.

Such a transmission eliminates all shifting of gears, and inherently gives an infinite number of "shifts" until it goes into "high". It permits through the use of the electric railway motor a high starting tractive effort and high acceleration.

Diesel-Electrics have proved their worth in yard service. In general, switching power is in the poorest condition of all classes, due, not only to actual age, but also to the practice of using outgrown road locomotives for switch engines. Normally, this latter practice results in high operating costs.

Two 4-wheeled Diesel-Electric trucks with relative low axle loading permit safe operation on the curves and trestles of industrial sidings, as well as main line railroads, and these trucks will go anywhere a box car can go.

In this service the overall thermal efficiency of the Diesel locomotive is 25 percent; of the steam locomotive 2 percent. The fuel burned by the Diesel-Electric locomotive costs 4 1/2 to 5 cents a gallon. Coal burned by steam locomotives costs $2 to $4 a ton, which means that in the average switching service, the fuel cost for the Diesel locomotive is only 25 percent of that of the steam locomotive. The availability for service of a Diesel-Electric locomotive is from 80 to 90 percent, of the steam locomotive 50 to 60 percent. In switching service the horsepower rating of the Diesel-Electric locomotives will average 50 to 60 percent of that of a comparable steam locomotive. Studies in switching service show consistent savings in operating costs, including fixed charges of 20 to 40 percent in favor of Diesel-Electric locomotives.

Transfer service consists normally of collecting a string of cars, assembled in switching service and moving them from one yard to another, or to various terminals. Based on freight economy, transfer service is the marginal operation, which may or may not justify the replacement of steam power with Diesel power. Many a time the transfer locomotives have a preponderance of switching service that can justify the use of Diesel power. With the preponderance of transfer work at relatively high speeds, the steam locomotive is favored. It is not until speeds of ten or more miles per hour are reached that the full horsepower of the steam locomotive is developed. The power demand in transfer service ranges from 800 to 1,600 horsepower.

For the use of Diesel locomotives for the existing standard equipment, the following factors govern; namely, (a) smoke elimination, (b) public demand, (c) water problem,

(d) traffic density, that lead to a consideration of complete electric operation using overhead trolley. The power demands in road service range from 1,600 to 4,400 horsepower.

Among the advantages claimed for electric transmission are: (1) Low maintenance cost; (2) less physical labor for engine men in control; (3) great overall efficiency in engine power utilization; (4) maximum tractive effort and maximum speed not a function of the engine; (5) simple to apply power to multiplicity of driving axles; (6) operation of auxiliary apparatus is simple; (7) double-end or multiple-unit control is simple; (8) the power plant may be located in the most advantageous position; (9) every engine has one or more critical speeds which may be avoided by use of electrical transmission.

The motive power units submitted in this section are all of the conventional Diesel-Electric type of locomotives, and are applicable to service having to do with the heavier tonnage requirements of this study; namely, 500 tons gross trailing load.

Proposals for these units are summarized in analysis 81.3. Submissions by manufacturers follow:

Baldwin Locomotive Works

Specifications covering 300, 400, 600 and 800-h.p. Diesel-Electric locomotives.

Electro-Motive Corporation

One 1,800-h.p. Diesel-Electric locomotive hauling 500 gross tons at 60 m.p.h. on a straight level track.

Ingersoll-Rand Company

Two Diesel-Electric locomotives and power cars of 600 and 800-h.p. capacities.

Westinghouse Electric and Manufacturing Company

Diesel-Electric power car (listed under power cars).

Mid-West Locomotive Works

65-ton Diesel-Electric locomotive.

Utility of Diesel-Electric Locomotives

The motive power units submitted in this section are all of the conventional Diesel-Electric type of locomotives, and are applicable to service having to do with the heavier tonnage requirements of this study; namely, 500 tons gross trailing load.



The fact that Diesel-Electric locomotives are just being developed for road service has considerable to do with the designs submitted since they are the result of experience with switching and transfer service. Thus, the weights are high and, perhaps, the costs, which vary from 250 to 328 pounds per horsepower, and from 31 cents to 50 cents per pound, respectively.

Gross weights vary, for the Container type of Diesel-Electric Power Car, on the average of 120,000 pounds, carrying an average payload of 50 net tons, and trailing an average of 130 tons gross. The cost of these units in quantity averages $50,000.

The straight Diesel-Electric locomotives covered herein vary in weight from 150,000 to 230,000 pounds, and cost from $75,000 to $110,000 for an average of 480 to 800-h.p., respectively.

Cost Data - Diesel-Electric Power Units

Locomotive Type

(Double-Truck)

| Cost | Weight | B.H.P. | Cost Per Pound | Cost Per B.H.P. | Weight Per B.H.P. |
|---|---|---|---|---|---|
| $ 75,000 | 150,000 | 480 | $.50 | $151.00 | 313 |
| 100,000 | 200,000 | 600 | .50 | 167.00 | 333 |
| 85,000 | 230,000 | 800 | .37 | 106.00 | 288 |
| 110,000 | 200,000 | 800 | .55 | 130.00 | 250 |

Diesel-Mechanical. The transmission problem centers around the provision of a suitable mechanism to nullify the inherent disadvantages of an inflexible prime mover.

Power developed by any engine or motor is in proportion to the product of its torque and revolutions per minute. An engine to be applicable to railway service must have speed and torque characteristics, variable between wide limits. Engines having most nearly the desired characteristics are said to be flexible, but although modern internal combustion engines are frequently praised for their flexibility, the only form of prime mover really flexible enough for direct application to railway service is the reciprocating steam engine.

Steam turbines and internal combustion engines all require the addition of gears or other connecting link for multiplying torque at the expense of speed; and vice versa, the ratio of multiplication being variable to meet the different operation conditions encountered.

The transmission of power from the internal combustion engine to the wheels of a railcar or locomotive has always been difficult of accomplishment. However, European railway manufacturers, engineers and operating administrations, during the last ten years, have been giving very serious and practical consideration to this problem, resulting in some valuable developments.

Since this system of power transmission must be a true energy converter, it is found in two general forms; namely, using gears throughout, (constant or sliding mesh), or the hydraulic or fluid flywheel type.

The mechanical drive has the advantage of being of lower cost, lighter and more efficient; electric transmission builders stress remote power, the reliability of their equipment over a long period; and the hydraulic gear manufacturers, the very high efficiency of their transmission when operating on direct drive.

As used on railcars or locomotives, mechanical drive includes, after the engine, the following parts: Clutch, gearbox, reverse gear and axle drive. In turn, these parts are connected by shafts, universal joints and rarely with chains.

Mechanical transmissions for heavy duty, using over 285 b.h.p., have not been very successful in America. Attempts are being made to secure a satisfactory mechanical transmission, with performance equal to that of electrical transmission, and at lower capital and maintenance cost.



Commercially, the hydraulic transmission thus far tried out in this country has not been generally successful, except for a few isolated cases, but notably in the case of the "Autotram".

However, Europe seems to present a different picture, as France has used mechanical transmission from the start, and seems generally committed. Hydraulic transmissions handling up to 410 b.h.p. are a reality in Europe. A prominent French railcar manufacturer advises that before the end of 1935 the French State Railways will have in operation direct mechanically driven Diesel equipment up to 500 b.h.p. capacity, using two such power plants per three-car train.

The high degree of economy of operation attained with Diesel traction in Europe is in no small way due to the successful development of properly designed Diesel engines coupled to all-mechanical transmissions. The fear, often expressed, that this high degree of economy of railcars may become problematic, owing to the high cost of their maintenance, has been completely dispelled by the experience of European railways with Diesel-Mechanical railcars. The carefully designed engines and mechanical transmissions as used are conducive to low maintenance - as many railcars are operating approximately 40,000 miles per year without a single breakdown, and mechanical transmissions perform approximately 250,000 miles per breakdown.

On the basis of past performance, railcars running on branch lines at an average speed of 25 miles per hour, the engine life is calculated at 310,000 miles, while the mechanical power transmission is estimated to correspond to at least 625,000 miles.

After the performance (on some lines) of approximately 86,000 miles in the case of local cars, or in the case of main-line "rapid" cars 125,000 miles, or after approximately two years of service a general repair is made. Experience shows that railcars usually are out of service only 8 percent of the total service time for overhauls and repairs, thus giving them an availability of 92 percent, as against modern steam locomotives showing at least 20 percent of the total service time out for repairs, so that a substantially higher percentage of standby units or capital investment must be provided for them as compared to railcars for the same service.

Total operating expenses of Diesel-Mechanical railcars have been found to be so low, that the saving obtainable by the introduction of railcar or motor train service as compared to the operation of steam trains, or other means of traction, enable the first cost of this equipment to be amortized very rapidly. Due to this saving, it enables the cost of the mechanical equipment of the car to be amortized within one year and a half, and the cost of the whole car to be repaid within approximately three years. No other type of railway rolling stock offers such rapid amortization.

Some of the outstanding European mechanical drives have the following characteristics:

All-Mechanical Type

Renault (French) - Transmission gear and engine are in one unit, which is easily removed for repairs. (French State Railway)

Maybach (German) - Each train of gears is fitted with its own clutch. (German State Railway)

Winterthur (Swiss) - Each train of gears acts as a separate clutch with the main clutch surpressed. (Federal Railway)

Ganz (Hungarian) - Gears always in mesh and operated pneumatically. (Hungarian State Railways)

Fiat (Italian) - Gears in constant mesh with pneumatically operated "dogs". (Italian State Railways)

Wilson (English) - Epicyclic gears, electro-pneumatically or mechanically controlled. (Great Western Railway)

Cotal (French) - This transmission consists of a multiple clutch of the dry plate type, cardan shaft, reverse gear, gearbox, speed reduction gear, chain drive to the driving axle. Bevel wheel type reverse gear is electro-magnetically operated.

Hydraulic Type

Vulcan Sinclair (English) under which Voith-Sinclair (German) operates, consists of a fluid or hydraulic cork converter and a hydraulic coupler to the transmission inner axle. Used extensively by the London General Omnibus, Ltd., and Great Western Railway of England.

Lysholm-Smith (French and Swedish) used by Leland Motors, Ltd., (England) for its railcars by the London Midland & Scottish Railway, consisting of a centrifugal pump rotor, secured to a sleeve carrying a clutch plate, which functions with a hydraulic turbine rotor connected to a secondary shaft through a "free wheel".

Austro-Daimler - Hydraulic clutch, consisting of two plates, each with 24 radio turbine vanes; in turn the drive shaft is connected with the transmission. (Austrian Federal Railways)

Vickers-Coats - (English) - Hydraulic torque converter consisting of simple vane engine-driven impeller, which in turn drives through the kinetic energy of the fluid, and a vaned impulse receiving unit geared to the rail axle or driving wheels.



Proposals are summarized in analysis 81.3. Submissions by manufacturers follow:

Automatic Gear Corporation

1. Self-contained conversion power truck, with pancake engine and all-mechanical transmission mounted under truck bolster. Diesel engine capacity 150-h.p. to 600-h.p. per power truck.

2. 60-ton, 400-h.p., steeple type locomotive equipped with two 200-h.p. pancake ignition type Diesel engines, two automatic gear clutches driving both axles in each truck applying power to eight 30-inch drivers.

3. 80-ton, 600-h.p., tandem type locomotive equipped with two 300-h.p. pancake engines and automatic gears and clutches. Locomotives of this type can be operated in "multiple".

Besler Systems

280-h.p. Power Car (listed under Container Power Cars).

Baldwin Locomotive Works

Two 30-ton Diesel-Mechanical locomotives, 220-h.p., of the 0-4-0 and 0-6-0 types for light-weight branch-line freight service and incidental switching. Also, two similar units using gasoline instead of Diesel fuel.

Clark Equipment Company

1. 35-ton locomotive equipped with two 285-h.p., ignition injection, Diesel engines and turbo-hydraulic drive.

2. 40-ton locomotive equipped with four 160-h.p., 4-cycle, Diesel engines and turbo-hydraulic drive.

3. 55-ton locomotive equipped with four 285-h.p., 16-cylinder, 4-cycle, injection ignition Diesel engines and turbo-hydraulic drive.

4. 77-ton locomotive equipped with four 400-h.p., 6-cylinder, opposed piston, 2-cycle, Diesel engines and turbo-hydraulic drive.

5. Conversion Equipment - 45-ton baggage and express cars - to be equipped with two 285-h.p. ignition injection Diesel engines and turbo-hydraulic drive. Capacity - with 12-tons gross load on car - trailing capacity at 45 m.p.h. 150 tons; at 60 m.p.h. 130 tons.

Stout Railplane Drive

Diesel-Mechanical drive with two 160-h.p., 2,200 r.p.m., Diesel engines, and all-mechanical transmission.

Sun Shipbuilding and Dry Dock Company

One 500-600-h.p. Diesel-Mechanical compressed-air locomotive, powered with four cylinder, vertical, two-cycle, Junkers type Diesel engine. Built as a unit with the engine is a two-stage air compressor. The engine is also connected to the transmission by a clutch. A modification of this design was also submitted for rail car operation. In addition to the compressed-air power units, a straight Diesel power type of transmission was submitted for locomotives and power cars.

Vulcan Iron Works

35-ton, 4-wheel, 250-h.p., Diesel-Mechanical locomotive tractor.

Utility of Diesel-Mechanical Power Units

Use of a self-contained power truck complete with engine and transmission all in one truck as a motive power unit, made possible by use of an all-mechanical automatic gear transmission, greatly simplifies the transmission problem. Here there is not only complete transmission equipment, but a flat ignition type Diesel engine all under the truck bolster. Engines ranging from 150 to 600-h.p. capacity can be built into such a power unit.

With a double-truck unit, it is possible to secure a maximum of 1,200-h.p., and with a locomotive operating in "multiple", which can be arranged, a maximum of 2,400-h.p. would be available under the control of one engineer.

Such a unit power plant permits complete replacing of an entire power truck with engine transmission and reverse gear within a few hours, without tying up expensive motive power and other equipment for days.

Cost Data - Small Diesel-Mechanical Units

Locomotive Type (Double-Truck)

| Cost | Weight | B.H.P. | Cost Per Pound | Cost Per B.H.P. | Weight Per B.H.P. |
|---|---|---|---|---|---|
| $38,000 | 120,000 | 400 | $0.317 | $ 95.00 | 300 |
| 65,000 | 160,000 | 600 | 0.405 | 108.00 | 266 |
| 97,000 | 154,000 (Hyd) | 1600 | 0.630 | 60.75 | 96 |

82. Modernization



XXIV TRANSPORT VEHICLES

82. Present Transport Vehicles

Railway

The box car which best serves as the basis for comparison of recently designed cars is the A.R.A. (or A.A.R.) standard, steel-sheathed, wood-lined box car, having inside dimensions as follows: Length 40 feet 6 inches; width 8 feet 9 inches; height 9 feet 4 inches. The car has a volume capacity of 3,311 cubic feet, light weight of 43,350 pounds when equipped with a pair of 5 1/2 inch by 10 inch journal trucks weighing 15,600 pounds and a load limit capacity of 125,650 pounds. The car is designed to provide adequate strength and dependability for general interchange service under present day operating conditions, and is the largest box car which may be moved freely in general interchange service without operating restrictions of consequence. The car weighs 1 1/2 to 2 tons less than representative box cars of substantially the same weight and volume capacity built just prior to the adoption of this standard design. The A.A.R. is also developing standard specifications for 50-ton and 70-ton hopper cars, but so far standard designs for these cars have not been adopted.

The Pennsylvania Railroad has recently built 500 automobile box cars of steel-sheathed, wood-lined construction, equipped with mechanical loading devices, which make possible the convenient handling and hauling of four automobiles per car, and eliminates all bracing or wooden decking in motor-car shipments. The car has inside dimensions as follows: Length 40 feet 6 inches; width 9 feet 2 inches; height 10 feet. The car has a nominal capacity of 100,000 pounds, light weight of 53,600 pounds including auto loaders, and a load limit capacity of 115,400 pounds.

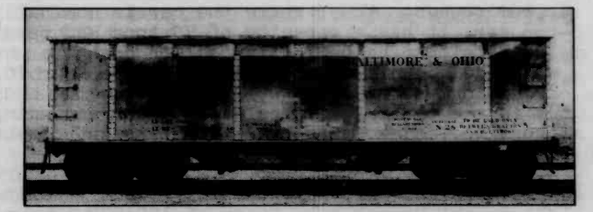
A new type flat car, of which 1,500 have been built by the Pennsylvania Railroad, the General Steel Castings Corporation collaborating on the design, have a height from top of rail to top of floor of only 3 feet 5 1/8 inches. The car has a length of 50 feet over striking castings, and a width over flooring of 9 feet 3 inches. Stake pockets have been provided and located so that requirements for pockets for flat cars, as well as for container cars, have been satisfied. The underframe is a one piece steel casting, incorporating center sills, side sills, cross members, draft castings, etc., the weight of the casting being approximately 25,500 pounds. The total weight of the car is 50,800 pounds. It is equipped with 6 inch by 11 inch axles and has a load limit capacity of 159,200 pounds.

The American Car and Foundry Company has designed a line of all-steel roofed hopper cars of 50 and 70 tons capacity for handling shipments of cement, flour, lamp black and other bulk materials. The car roof is equipped with eight hinged hatch covers, flanged downward to prevent entrance of water, and the two hopper compartments are each equipped with two discharge gates. The car can thus be loaded and unloaded easily and quickly. Inside surfaces of the hopper compartments are smooth and the car is self-clearing. The 70-ton car has an inside length of 29 feet 3 inches; inside width of 9 feet 5 1/2 inches; height from rail to top of running board 12 feet 10 5/8 inches; length over strikers 35 feet 1 3/4 inches; volume capacity of 2,050 cubic feet, light weight of 53,100 pounds; and load limit of 156,900 pounds.

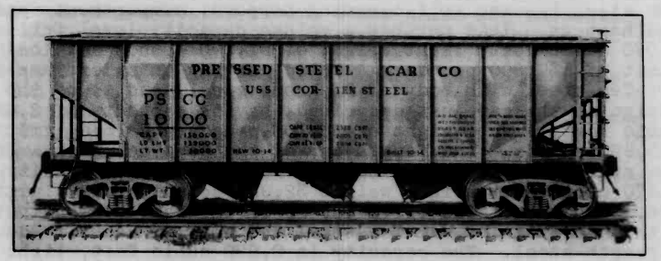
A three-compartment hopper car, which demonstrates the possibilities of reducing tare weight, has recently been built by the Pressed Steel Car Company. Alloy steels were used in the truck side frames, bolsters and other castings and U.S.S. Cor-Ten steel was used practically throughout in the rolled sections and plate. The car, equipped with four-wheel trucks having 5 1/2 inch by 10 inch axles, has a light weight of 30,000 pounds, a load limit of 139,000 pounds and volume capacity level full of 2,328 cubic feet. The car body has inside dimensions 34 feet 10 inches long and 10 feet 5 inches wide. Top of car body is 10 feet 8 inches above the rail. The car trucks were carefully designed to eliminate weight, so that approximately 3,500 pounds saving per car was effected, the two trucks weighing 12,200 pounds. The axles were hollow-bored 3 1/2 inches in diameter with a reduction in weight of 920 pounds per car. The use of rolled steel wheels effected a reduction of 1,600 pounds per car compared with cast iron wheels.

Early in 1932 the Alcoa Ore Company, subsidiary of the Aluminum Company of America, placed ten 70-ton hopper cars with aluminum bodies in service transporting bauxite. About the same time an identical car was placed in service hauling sulphur. After some 116 trips, traveling a distance of 2,540 miles, the inside face of the sheets which had been in contact with the sulphur remained bright and shiny. As a further experiment, three hoppers built of the same aluminum alloy were filled with coal bought especially for its high sulphur content. After two years no noticeable depreciation in the aluminum was found. Each of the aluminum hopper cars was built as follows: Inside length 39 feet 11 7/8 inches; inside width 9 feet 6 inches; height from rail to top of body, 10 feet 6 inches; length over striking castings 41 feet 11 inches;

Self-Clearing Hopper Car with Covered Top (for Cement)
The Baltimore and Ohio Railroad Company




Aluminum Hopper Car, Weighs 27,700 Pounds,
70.6 ton Load Limit. Baltimore & Ohio Railroad Co.




Hopper Car of Alloy Steel, weighs 30,000 Pounds,
69.5 ton Load Limit. Pressed Steel Car Company

volume capacity level full 2,475 cubic feet; light weight 38,900 pounds; load limit 171,100 pounds on 6 inch by 11 inch axles. Similar hopper cars of steel construction, having the same volume capacity and nominal weight capacity, weigh 10,000 to 20,000 pounds more than the aluminum cars. Approximately 12,500 pounds of aluminum plates, shapes and castings were used, but standard construction methods and materials were employed for the trucks, brake equipment, safety devices, draft gears, couplers, center plates, door mechanism and rivets.

An all aluminum hopper car was built by the Baltimore and Ohio Railroad Company early in 1934. Standard 50-ton trucks with 5 1/2 inch by 10 inch journals support the car, while the bolsters, spring planks and brake levers are of aluminum. The center sill is of fishbelly girder construction, built of aluminum plates and angles. The side stakes, side sills, corner posts and top chords, as well as the side, slope and end sheets are of aluminum alloys. The car has an inside length of 35 feet; inside width 10 feet 2 inches; height from rail to top of body 10 feet 8 inches; volume capacity level full 2,450 cubic feet; light weight 27,700 pounds; load limit 141,300 pounds. Thus, while the car is nominally known as a 55-ton car, it has a capacity of 70 tons and permits the maximum load limit to be hauled in coal through the use of end hoppers with end doors. In building the hopper car 10,175 pounds of aluminum were used - 9,196 pounds in the body and 979 pounds in the trucks. A steel car of corresponding dimensions without the end hoppers has a light weight of about 44,000 pounds, and load limit of 125,000 pounds.

The Baltimore and Ohio Railroad has recently built five other light-weight hopper cars, each of 100,000 pounds nominal capacity. One car has body and underframe of Cor-Ten steel, the body being arranged with center and end hoppers. This car has a volume capacity level full of 2,394 cubic feet, light weight of 32,000 pounds and load limit of 137,000 pounds. Another hopper car with body and underframe of Cor-Ten steel has two self-clearing hoppers, compartments and no end hoppers. This car has a volume capacity level full of 2,070 cubic feet, light weight of 31,200 pounds and load limit of 137,800 pounds. A third car has an underframe of Cor-Ten steel with body of Plykrome steel, and is of the same design as the car just described, having capacity of 2,070 cubic feet, light weight of 33,100 pounds and load limit of 135,900 pounds. The fourth car of the same design has Cor-Ten steel underframe and body of rustless iron, capacity 2,070 cubic feet, light weight 32,900 pounds, load limit 136,100 pounds. The fifth car is of the same design, but with underframe of Man-Ten steel and body of Republic double-strength steel. The capacity is 2,070 cubic feet, light weight 33,000 pounds, load limit 136,000 pounds. All five of the cars have articulated lateral motion trucks with 5 1/2 inch by 10 inch journals; antifriction self-centering side bearings; bolster spring stabilizers; cushion underframe; high-powered hand brake; A-B air brake; and safety stay lock couplers.



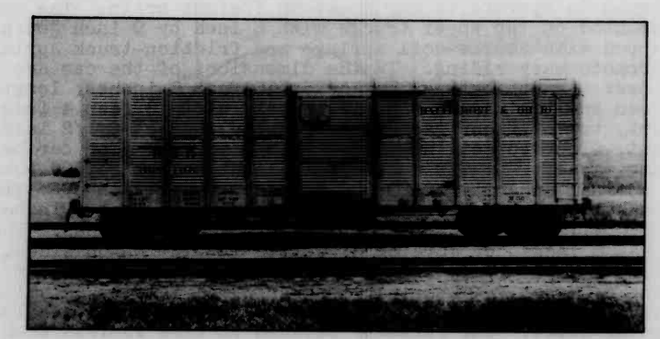
The last four hopper cars described are equipped with brake slack adjusters and Bell Crank truck levers. These five hopper cars have a ratio of pay load to tare of better than four to one and haul loads which ordinarily require 6 inch by 11 inch axles on 5 1/2 inch by 10 inch axles without overloading them.

The Baltimore and Ohio Railroad has just completed building a light-weight covered hopper car designed for carrying cement. This car built with two hopper compartments has eight water-tight hinged roof hatches, and is equipped with self-clearing hopper discharge gates. The underframe is of Man-Ten steel and the body of Alan Wood 70-90 steel. The car has a volume capacity of 1,740 cubic feet, light weight of 35,000 pounds and load limit of 134,000 pounds. The car has the same special equipment as the four hopper cars described in the preceding paragraph.

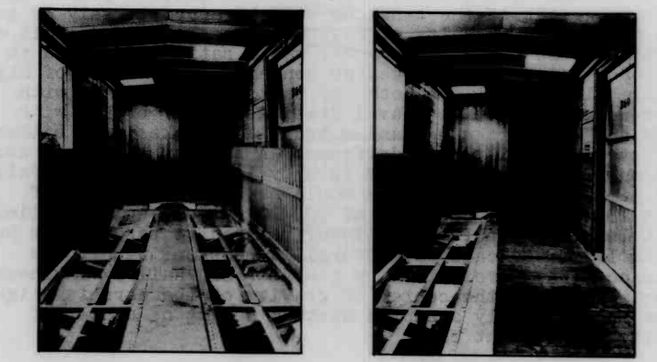
In the field of improved box car design and construction, the Baltimore and Ohio Railroad has also made a distinct contribution by recently building six new type box cars, three each of 80,000 and 100,000 pounds nominal capacity. One of the 80,000 pound nominal capacity box cars has inside dimensions as follows: Length 40 feet 6 inches; width 8 feet 9 inches; height 9 feet 6 inches; with volume capacity of 3,390 cubic feet; light weight 37,500 pounds; and load limit 98,500 pounds. This car has both body and underframe of Cor-Ten steel and is carried on 5 inch by 9 inch journals. The other two box cars on 5 inch by 9 inch journals have "covered wagon" type bodies. One car has Cor-Ten steel underframe and copper-bearing, steel-sheathed, wood-lined body. This car has an inside length of 40 feet 6 inches; inside width of 8 feet 9 inches; and inside height of 9 feet 2 inches; with volume capacity of 3,248 cubic feet; light weight of 38,400 pounds; and load limit of 97,600 pounds. The covered wagon body has integral side and roof sheets with curved construction at the junction of the roof and sides, resulting in greater strength, lower construction cost and increased cubical content. The covered wagon cars are equipped with water-tight hinged roof hatches, and hinged wooden floors below which are automatic self-locking hopper doors, thereby providing for quick and economical loading and unloading of bulk materials. The third 80,000 pound nominal capacity box car has underframe of Man-Ten steel, and is sheathed with Cor-Ten steel with Masonite lining. It has inside dimensions as follows: Length 40 feet 7 inches; width 8 feet 10 inches; height 9 feet 1 inch. The volume capacity is 3,282 cubic feet; light weight 34,000 pounds; and load limit 102,000 pounds. The car has the covered wagon type body just described.

The three 100,000 pound nominal capacity box cars built by the Baltimore and Ohio Railroad are of the covered wagon type, and each is carried on 5 1/2 inch by 10 inch journals. One car was converted from an 80,000 pound nominal capacity car, requiring a new body, to a steel-sheathed, wood-lined covered wagon type car with an increase in volume capacity from 2,798 cubic feet to 3,334 cubic feet. This car now has inside dimensions as follows: Length 40 feet 3 inches; width 9 feet; height 9 feet 2 inches. The tare weight of the car is 42,700 pounds, and the load limit 126,300 pounds. The other two box cars have steel-sheathed wood-lined bodies and are practically identical in size and construction, both having center sills of Man-Ten steel and hoppers of Cor-Ten steel. However, one car has center hopper bottoms which discharge inside of tracks, while the other has center hopper bottoms which discharge outside of tracks. Both cars have a volume capacity of 3,264 cubic feet and inside dimensions as follows: Length 40 feet 3 inches; width 9 feet; height 9 feet. One car weighs 46,900 pounds and the other weighs 46,700 pounds, with corresponding load limits of 122,100 pounds and 122,300 pounds. All six box cars are equipped with articulated lateral motion trucks; antifriction, self-centering side bearings; bolster spring stabilizers; brake slack adjusters; high-powered hand brakes; A-B air brake; and metal running boards. The reconstructed box car is equipped with high-capacity friction draft gear, and the other five cars have a cushion underframe and safety stay lock couplers. The five new cars are equipped with Bell Crank truck levers, and have side door rear edge locks and ball-bearing rollers. This brief description indicates the improvements which have been made in designing cars to more nearly meet commercial requirements, reduction of tare weight without reduction of load-carrying ability, and use of new or improved car equipment to assist in car dependability and performance.





Covered Wagon Type Box Car for Bulk & Packaged Freight
Baltimore and Ohio Railroad Company

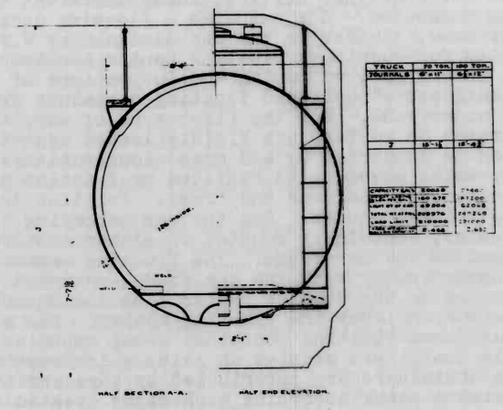


Interior of Covered Wagon Type Box Car Showing
Roof Hatches, Hinged Floors, and Discharge Hoppers

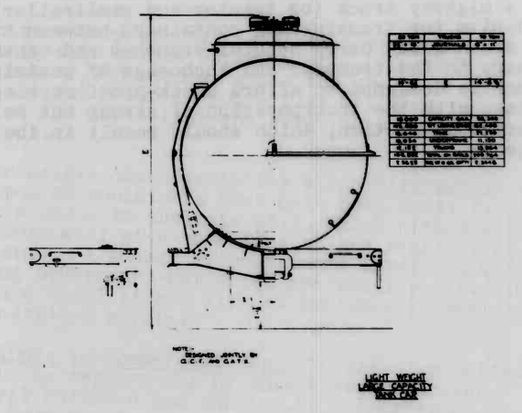
For refrigerated products the North American Car Corporation has developed a small all-steel, ice-refrigerated car which closely follows European practice in car construction, but is designed to operate in any American freight train. The car is mounted on two wheel trucks with 5 inch by 9 inch journals, equipped with double-coil springs and friction-truck springs to promote easy riding. Inside dimensions of the car are as follows: Length between bulkheads 15 feet 8 inches; length between end linings 19 feet 10 inches; width 8 feet 4 inches; height, top of floor rack to beef rails, 6 feet 2 1/2 inches; height, floor to ceiling, 7 feet 2 5/8 inches. The car has a volume capacity of 770 cubic feet, light weight 23,000 pounds and nominal capacity of 20,000 pounds. The length over striking castings is 22 feet 1 inch; wheel base 13 feet 6 inches; and overall height from top of rail 13 feet 11 inches. The car has 5 inches or more of effective insulation on sides, ends, floor and roof, Dry Zero being used with inside car lining of Masonite. The car has performed well in actual service and represents one answer to the demand for smaller shipping units. The ratio of payload to tare is less than one to one.

Designs for a large capacity petroleum tank car have been developed by the American Car and Foundry Company, General American Transportation Company, General Steel Castings Corporation and O. C. Duryea Corporation. It was found that using standard four-wheel trucks with 6 1/2 inch by 12 inch journals and a maximum allowable load on rails of 251,000 pounds that the tare weight of the tank car will be approximately 30 tons, with a carrying capacity of 24,000 gallons and load limit of practically 95 tons. Such a car has a ratio of payload to tare of 3 1/6 to 1. The design contemplates the use of high-tensile alloy steel for both the tank and underframe with light-weight selective travel draft gear, air brakes with empty and load brake mechanism and clasp brakes, and either cast steel or built-up underframe. A similar car to be carried on 70-ton trucks with 6 inch by 11 inch journals, rail load limit of 210,000 pounds would have a tare weight of about 23 1/2 tons, capacity of 20,000 gallons and load limit of at least 80 tons, the ratio of payload to tare weight being 3.4 to 1. These cars have overall dimensions within the clearance lines prescribed by the American Railway Engineering Association, and the center of gravity of the cars is slightly below the generally accepted maximum height of center of gravity for freight cars.





Design of Large Capacity Tank Car
General Steel Castings Corporation.



Design of Large Capacity Tank Car
American Car and Foundry Company.

The General Steel Castings Corporation has designed but not built a car for container service, three different types of frame being suggested. One embodies a floating deck and cast-steel underframe, similar to the car designed by W.P. Kellett; another calls for cushioned floating center construction and cast-steel underframe, embodying the Duryea type of car; while the third suggests a cushioned floating container group and cast-steel underframe. For the first type of car, the containers carried on casters are rigidly locked against movement and the deck is supported by and moved longitudinally on the underframe, which movement is resisted by friction plates and springs located between deck and frame. Friction draft gears receive the initial shocks. For the car embodying the Duryea floating center, containers mounted on either casters or skids may be locked to the car frame. The floating center member travels longitudinally with the car frame, resisted by cushion springs located on the coupler center line and interposed between the body bolster and floating member. The container car with cushioned floating container group embodies laterally transferable containers mounted on skids which rest on the car floor. The containers are interlocked by keys and are locked together between shock absorbing mechanisms located at both ends of the container group. Friction draft gears absorb the initial shocks, the shock absorbing mechanism the secondary shocks, sliding friction in combination with them cushioning the rebound. The use and operation of containers in conjunction with any of the three designs of container cars contemplates the use of a highway truck (or tractor and semitrailer) equipped with a mechanism for transferring containers between truck and car. Each truck would carry special wrenches and other equipment necessary to the transfer and anchorage of containers. The container car is designed to afford shock-proof carriage of container lading, with the incorporation of strong but relatively light unitary construction, which should result in low car maintenance expense.



## 83. Containers

Vehicle

Containers may be classified for transportation purposes either according to the manner in which they are handled, or the products which they will suitably carry. Thus, containers may be (1) lifted, either by an overhead crane or from below by a lift truck; (2) roller, by means of wheels, casters or rollers attached to the container; or (3) skidded, by means of power transmitted through skid-rails forming the base of the container. Various combinations of these three methods of movement have been incorporated in different designs.

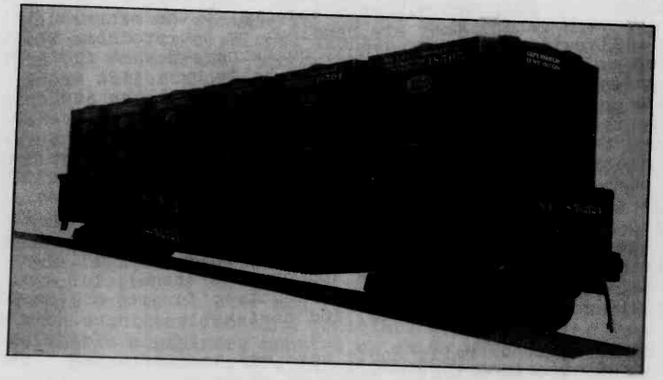
As to use, containers have been designed for ordinary freight and merchandise; bulk material requiring protection from the elements (as lime and cement); bulk material not requiring protection (as brick and crushed stone); liquid material (as milk and petroleum products); furniture and household goods; live animals; and perishables.

For movement by rail, containers may be carried on ordinary flat cars slightly modified, specially designed flat cars, special drop-frame or well cars, regular gondola cars, drop-side gondolas, or in box or express cars. By highway, containers may be carried on trucks, trailers or semitrailers, in some cases the vehicle being standard automotive equipment with slight modifications, while other designs involve special highway vehicles.

Containers vary greatly in size, the largest being over 20 feet long with volume capacity of 1,050 cubic feet and weighing some 6,000 pounds, while the smallest container carried on (not in) a car is but 4 feet 3 inches long with volume capacity of 110 cubic feet and weighing slightly more than 1,100 pounds.

The principal characteristics which distinguish the different types of containers that have been built for coordinated service are shown in analysis 83.1, which with the description which follows will give some idea of the range of equipment now available. A number of containers involving modifications of existing equipment, but which are still in the blueprint or miniature model stage, are not included in analysis 83.1 but are described herein.

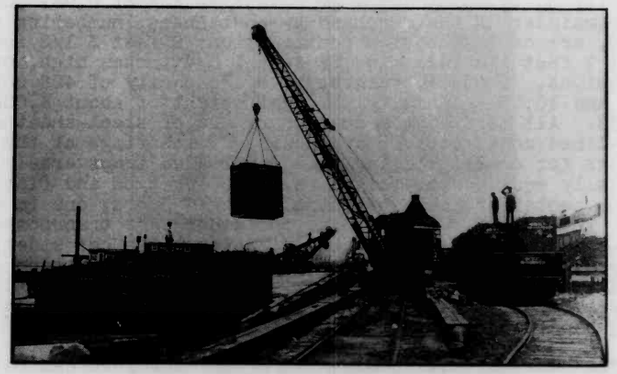
Containers in Commercial Use. In actual practice containers are in regular use by only a few railroads. The New York Central Railroad and the L.C.L. Corporation, considered as a unit, own the greatest number of containers - there being over 3,900 merchandise containers and more than 8,500 bulk material containers. Some 2,300 of the merchandise containers are mounted on legs to permit handling by industrial lift trucks.



Merchandise Containers on Special Railroad Car.
The L.C.L. Corporation (New York Central Lines).

The L.C.L. Corporation Merchandise Containers
Being Transferred from Car to Platform





The L.C.L. Corporation Bulk Material Containers
Being Transferred from Car to Barge

The L.C.L. Corporation
Refrigerator Container

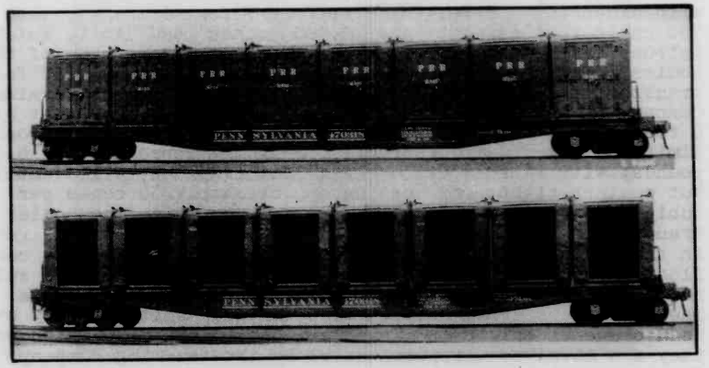
These containers have overall dimensions as follows: Length 9 feet 3 3/8 inches; width 7 feet 2 1/2 inches; height 9 feet 4 1/16 inches; with volume capacity of 417 cubic feet; weight capacity of 10,000 pounds; and light weight of 2,967 pounds. The remainder of the merchandise containers, numbering almost 1,600, are of flat bottom construction; 9 feet 3 1/2 inches long; 7 feet 1/2 inch wide; 8 feet 1 3/4 inches high, overall dimensions. These containers have a capacity of 426 cubic feet and 10,000 pounds, with light weight of about 3,000 pounds. All merchandise containers are of steel-sheathed, wood-lined construction, are equipped with rings at the top corners for crane handling, and are loaded transversely on specially equipped gondola cars. The leg-type and flat-bottom containers have two single hinged doors, one in each end. The leg-type merchandise containers are transported in drop-side gondolas. At station platforms the car sides, when dropped, form an apron which bridges the space between car and platform over which lift trucks operate. Flat bottom containers move in low (stationary) side gondolas, the containers being handled in and out of cars by crane.

The bulk material containers of the New York Central Railroad consist of some 6,000 all-steel drop-bottom containers, each with water-tight roof hatch designed for transporting cement, lime and similar products, and over 2,500 all steel containers used principally in transporting brick. Both types of bulk material containers have a volume capacity of 209 cubic feet; weight capacity of 11,000 pounds; and outside dimensions as follows: Length 7 feet 2 1/2 inches; width 4 feet 8 3/4 inches; height 8 feet 2 1/8 inches. The brick containers each weigh 3,000 pounds, while the other bulk material containers weigh 2,300 pounds apiece. The containers are handled in and out of cars by crane, and are loaded 12 to a gondola car. Of the bulk material containers, those carrying brick move largely between Hudson River brick yards and the metropolitan New York area, while the cement and lime containers have been used mostly in connection with road building projects.

A comparatively small number of L.C.L. Corporation merchandise containers are leased to three railroads other than the New York Central. The remainder, many of which are used by the Universal Carloading and Distributing Company, move over the New York Central Lines with regular container service between many large cities, such as New York, Boston, Syracuse, Rochester, Buffalo, Cleveland, Chicago, Detroit and others. At all principal points lift truck and crane equipment are available to effect the transfer of containers between cars, platforms and highway vehicles.

The Pennsylvania Railroad operates flat bottom containers for merchandise and for bulk materials, all containers being handled by cranes. Containers are transported on flat cars

Weathertight Bulk Material Container
Pennsylvania Railroad Co.



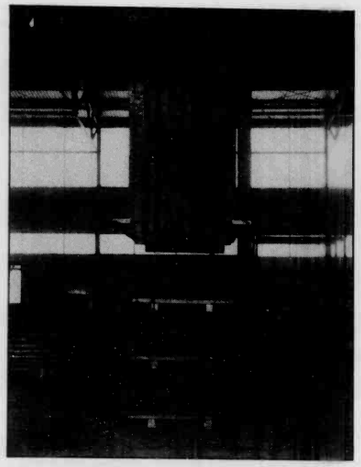

Pennsylvania Railroad Co. Containers
Mounted on 70-ton capacity Flat Car

equipped with special castings which take the place of stake pockets and afford anchorage for the containers so that no auxiliary fastenings are required. A feature of the Pennsylvania operation is the container transfer yard at Enola (Harrisburg), Pennsylvania, and South Kearney, New Jersey. In actual operation, a carload of containers originating at any point may have one container for each of several destinations. At the two transfer yards the containers are sorted, being moved to and from other cars so that a car leaving the transfer has a solid load for destination. The transfer service is performed speedily, the time required to couple on to a container, hoist, transfer and lower in place on another car often requiring less than one minute. No ground men are employed, all work being done by the crane operator. The additional force at the transfer consists of a foreman and yard clerk. Practically all of the traffic handled in the merchandise containers is less than carload freight in station-to-station movement. In most cases the containers at initial and final terminals are not removed from the car, in which case the containers take the place of a compartment car.

In addition to the more than 4,000 merchandise containers 9 feet long by 7 feet wide by 8 feet high, which the Pennsylvania Railroad operates in regular station-to-station service, in lieu of less than carload freight cars, a so-called demountable truck body service is provided. Under this arrangement any truck body not exceeding 25 feet in length, 8 1/2 feet in width and 9 feet in height, and equipped at the top with lifting links to engage hooks of crane conveyor, may be transported between New York and Richmond, Virginia. To encourage the use of this service, the railroad built 50 truck bodies with dimensions 19 feet by 7 feet by 7 feet 4 inches, each of 790 cubic feet capacity and 30,000 pounds load limit, which patrons can lease. However, little use has been made of the bodies. The service has been used regularly since 1932 for transporting bodies designed and built by the Motor Terminals Company of New York. These bodies are 20 feet by 8 feet by 8 feet; of 1,000 cubic feet capacity and 60,000 pounds load limit; of all-steel construction weighing approximately 6,000 pounds; with large doors on each of four sides; well ventilated, but weather tight; and costing approximately 50 cents per cubic foot of capacity. The flat cars on which the bodies are transported are equipped with special socket anchorages recessed in the car deck and covered with a plate flush with the car floor when bodies are not in position. The bodies have suffered no ill effects in more than two years of railroad service. They are transferred between flat car and semitrailer by overhead crane at origin and destination station, from which point they are moved to shippers' doors by the trucking company. Similar truck body containers designed by Mr. B. F. Fitch, President of Motor Terminals Company, have been successfully operated over the Cincinnati and Lake Erie Railroad.

Pennsylvania Railroad Co. Containers Mounted on Highway Semi-Trailer.

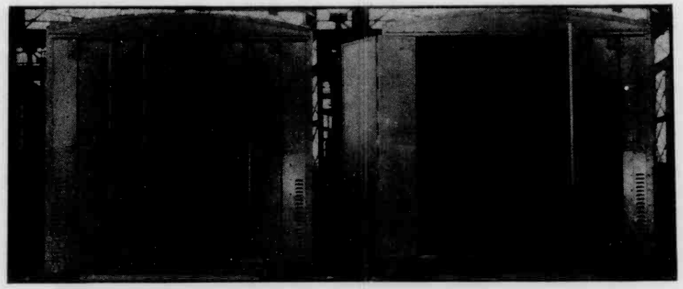
"Pennsylvania" Demountable Truck Body



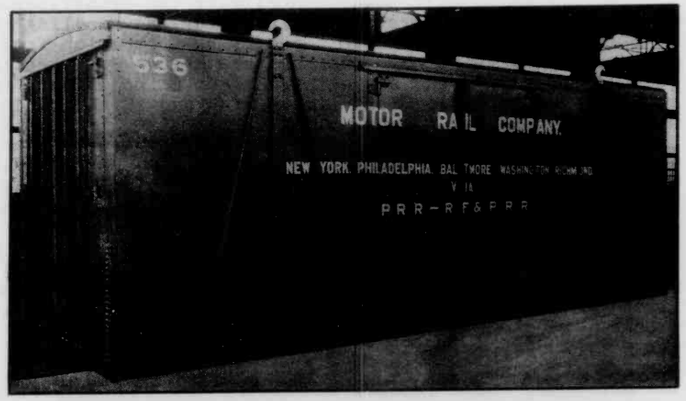
Bulk Material Container
for Carrying Brick

Weathertight Bulk Material Container
of Youngstown Steel Door Company





Watertight Folding End Doors of Special Design
Motor Rail Company Container



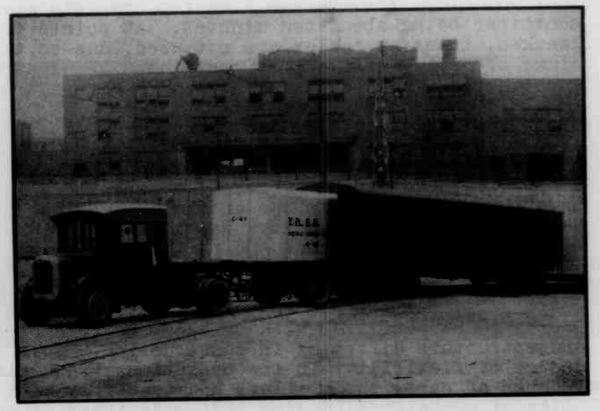

All Steel, Flat Bottom, Lift Type Container, 20'-0"long.
Motor Rail Company, B.F. Fitch, Designer.

The Pennsylvania Railroad has also built containers for carrying bulk freight of which there are: 108 containers not weatherproof, 7 feet long, 4 feet 3 inches wide, 8 feet 9 inches high, suitable for common brick, gravel, sand, crushed stone, etc.; 204 containers, weatherproof with drop bottoms, 7 feet long, 4 feet 3 inches wide, 6 feet 3 1/2 inches high, suitable for cement and lime. These containers load 12 to a gondola car, 26 such cars being equipped with heavy-duty axles to carry 125 gross tons each. Material is loaded into containers through the top and is discharged through drop-bottom doors, the containers being handled by crane. The cement and lime containers have had steady use, but the other type has been used principally in experimental service. The Youngstown Steel Door Company, which collaborated with the Pennsylvania Railroad in building these containers, has developed a modified container for handling dolomite cement, lime, etc., which requires only a single-line hoist and permits distribution of the contents of one container in any desired quantity. A number of these containers are in regular use between limestone plants and steel mills, being transported by the Nickel Plate Railroad.

Another type of container consisting of a steel jacket, which is slipped over a commodity when stacked on a skid or platform, has been built experimentally by the Pennsylvania Railroad. Such containers are designed for the handling of face brick and similar materials requiring protection from chipping and damage. The containers are 7 feet 6 inches long, 4 feet 3 inches wide and are either 3 feet 6 inches or 7 feet high, with corresponding load limits of 8 and 16 thousand pounds.

The Milwaukee Electric Railway and Light Company operates a well developed coordinated rail-highway service in connection with the collection, transportation and delivery of merchandise freight, gasoline, milk and coal, using demountable truck body containers. To illustrate the operation, freight is picked up in Milwaukee by tractor semitrailers, a container being mounted on each semitrailer; the containers are transferred to railroad cars and transported to the railheads; the containers are there transferred to semitrailers for delivery of contents via highway. The tractors are equipped with winches driven by the truck motor. The containers are of the skid or slide-off type, and are moved on and off the semitrailer by a cable actuated by the winch. The cars, which are end loaded, have channel guides to receive the skid-rails, which form the base of the container. At the Milwaukee terminal there is a fantail of stub tracks with a transfer table runway at right angles to these tracks. In operation the containers are pulled by cable from car or semitrailer onto the transfer table, which is then moved until in line with the channel guides on another car, semitrailer or storage platform. The container is then skidded to the proper vehicle or onto a platform. The





Transferring Skid Container from Car to Semi-Trailer
The Milwaukee Electric Railway & Light Company

Skid Type Container Mounted on Semi-Trailer

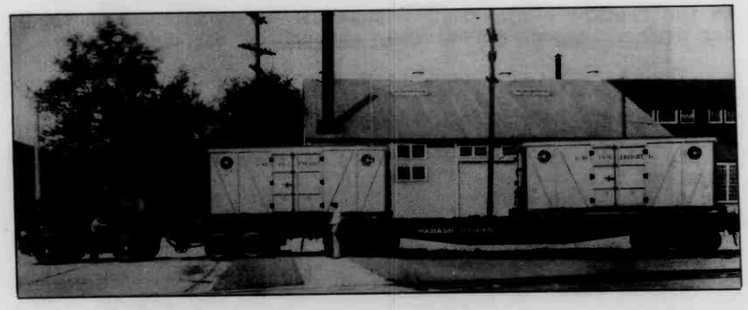
transfer table speeds up the operation, one man performing the whole operation of transferring containers between rail and highway vehicles, the average time for complete movement of one container being about ten minutes. At points other than Milwaukee, transfer tables are not used, due to the small volume of daily traffic, the containers being exchanged directly between railroad cars and highway semitrailers.

Several types of containers are used in this operation, there being open top containers 14 feet 2 inches long, 6 feet 8 inches wide, 5 feet 8 inches high; closed containers 14 feet 2 inches long, 6 feet 8 inches wide, 5 feet 11 inches high, each with a three part door at one end; milk tank containers of 1,250 to 1,750 gallons capacity; gasoline containers of 2,000 gallons capacity; and coal and rough material containers, 15 feet 9 inches long, 7 feet wide, 3 feet 11 inches high, mounted on dump trucks, the contents being discharged through a hinged end gate. All of the containers have the same type of skid-rails and underframe, with only the bodies mounted on the understructure differing in construction. This produces a high degree of flexibility in the operations, requiring a minimum number of cars, semitrailers and tractors, with a multiplicity of containers, having bodies designed to carry general freight and special products.

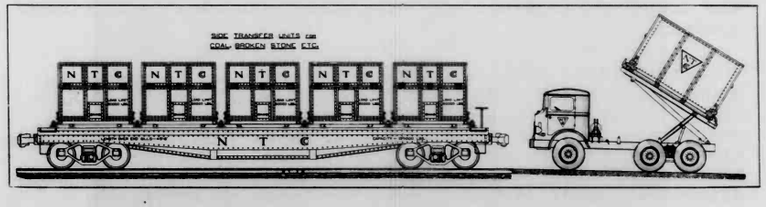
Another system of coordinated rail-highway service, which employs containers mounted on casters instead of on skid-rails, has been developed by Mr. W. P. Kellett, Chief Engineer of Acme Fast Freight, Inc. At present two special flat cars each carrying two large containers have been constructed, one for the Delaware, Lackawanna & Western Railway Company, and one for the Wabash Railway Company, the cars having been in test service over these lines between New York and Chicago for several months during 1934. To effect transfer of containers between rail and highway a tractor and specially designed semitrailer is used. Particular attention has been paid to absorption of shocks incident to rail travel. In test runs, light, fragile and dense freight, which was loaded indiscriminately in containers without blocking or bracing showed no signs of shifting or damage throughout the rail journey. The freight car has a movable deck mounted on the underframe of a practically standard flat car. This deck has a longitudinal spring cushioned movement of 4 1/2 inches either direction from neutral position, the movement being independent of the car underframe. The car is equipped with a draft gear having 4 1/2 inches of travel in buff, which results in a total friction cushioned movement of 9 inches under impact, compared to a movement of 2 3/4 inches in the usual freight car.

The containers are 21 feet 1 1/2 inches long, 7 feet 9 inches wide, 8 feet 5 3/4 inches high, of steel and wood construction, volume capacity 1,050 cubic feet, load limit of





Transferring Acme Fast Freight, Inc. Container
Between Special Flat Car and Highway Unit




Proposed Rail - Highway Container Equipment
of W. P. Kellett for Movement of Bulk Material

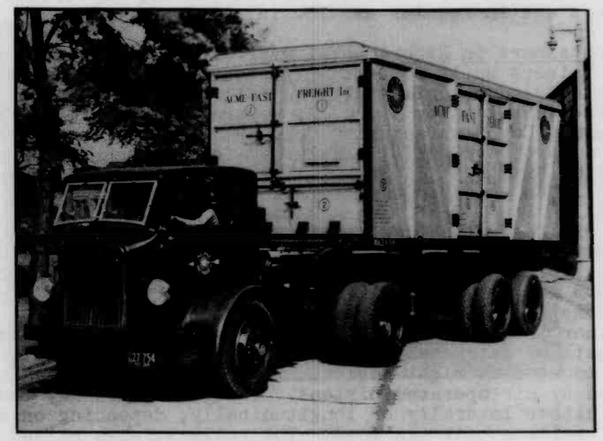
25,000 pounds on the highway and weigh 5,800 pounds each. There is a double-hinged door on each side and a three-part door occupies the whole of each end, thus providing great accessibility. Each container is mounted on eight, double-wheel, ball bearing, swivel casters, and is secured to the freight car by four adjustable stops mounted on the car deck which engage the four corners of the container.

The highway unit consists of a cab-over-engine design tractor, and a special drop-frame, dual-axle, semitrailer equipped with four hydraulic jacks, which elevate and tilt a platform built with guides and stops to engage the casters on the container. The tractor is provided with a power winch, drum, cable and controls mounted behind the cab. End transfer of containers between freight car and semitrailer is advocated, although side transfer with the semitrailer parked parallel and close to the car side sills can be accomplished by means of tackle blocks and special rigging.

In practice the tractor maneuvers the semitrailer into position on a roadway adjacent to the car at a siding with the highway vehicle in line with the rails. No connection is made between the semitrailer and freight car. The moveable platform on semitrailer is elevated, lowered or tilted until it is on the same plane and aligned with the freight car deck. After releasing the container end stops on the car, the cable on the tractor is attached to the container, and it is rolled from the end of the car onto the semitrailer to which it is secured by turnbuckles. To reverse the operation it is necessary to pass the cable under the semitrailer, over the car deck, around a sheave and back to the end of the container at the rear of semitrailer. The considerable amount of manual operation that is necessary to effect transfer of the container between rail and highway vehicles is time consuming.

The Kellett plan calls for other types of bodies to be mounted on the 21 foot 1 1/2 inch roller subframe, and handled by the same rail and highway equipment. These bodies, which have not been built, would be for refrigerated products: Live poultry; live stock; bulk milk; other tank products; tile, sewer pipe, etc., in low side gondola bodies; lumber, structural steel, etc., on open stake bodies. In addition an open top bulk material container mounted on casters, approximately 10 feet long by 8 feet 6 inches wide by 6 feet 6 inches high with 20,000 pound load limit, is proposed. Five of these containers, arranged for side transfer, would be loaded on a 46-foot car. Each container would have a hinged gate extending the full width of each end, with a small vertical sliding door in the center of each gate. The container would be moved by highway on a dual rear axle elevating dump truck, and the container contents discharged by gravity through the end gate or small door.





Container Mounted for Highway Movement
Acme Fast Freight, Inc., W. P. Kellett, Designer

Special Tractor and Semi-Trailer Unit
for Transferring and Hauling Container

As far as is known, no other types of containers carried on flat or open top railroad cars and on highway trucks or trailers are in regular service in this country.

Containers in Experimental Use. There are several types of containers built for rail-highway service, which have been tested or used experimentally in rail service. One is the container designed by Mr. G. R. Meyercord and built by the Mt. Vernon Car Manufacturing Company. Three sizes of containers have been built, namely: 7 feet 9 inches long by 6 feet wide by 7 feet 11 inches high, 304 cubic feet, light weight 1,760 pounds, load limit 10,000 pounds; 9 feet 6 inches long by 7 feet 9 inches wide by 7 feet 11 inches high, 493 cubic feet, light weight 2,280 pounds, load limit 10,000 pounds; 15 feet 11 1/2 inches long, 7 feet 11 inches wide, 7 feet 11 inches high, 823 cubic feet, light weight 2,935 pounds. All these containers are of steel and special plywood construction with large double doors at each end. Each container is of the flat bottom type and is equipped with four sets of retractable rollers, there being two rollers to a set mounted at right angles. The rollers are raised and lowered by air operated pistons. The containers may thus be moved either laterally or longitudinally, depending on which set of rollers bear the load. The rollers, when raised, fit into recesses in the container frame. The container is secured to an ordinary flat car by special spring clamps and turnbuckle rods fastened to the container sides and car stake pockets. The spring hold-down clamps absorb a considerable amount of impact. To transfer the container to a highway vehicle the International Harvester Company has built a truck with a movable flat deck, which is elevated and tilted by means of the truck motor. Using a capstan and cable mounted on the truck,with extension guide rails and platform supporting jacks, a container can be moved from street level on or off the truck platform. A semitrailer with an elevating tilting platform has also been built for handling this container by the B. & J. Trailer Company. Hand-operated, hydraulic jacks, one at each corner of the trailer platform, make it possible to bring the platform level with the flat car floor, after which the container can be rolled sidewise onto the semitrailer. The complete transfer operation can be accomplished by one man in about 20 minutes.

A modification of the Milwaukee skid container plan has been developed by Mr. B. F. Fitch, and the container tested experimentally by the New York, Ontario & Western Railroad. The container is 10 feet 3 inches long, 8 feet wide and at present 4 feet high with open top, though in production a closed container 8 feet high would be used. The container of all steel construction is mounted on two longitudinal skid-rails, which slide on two recessed channels running the full width of the flat car deck. An ordinary flat car is used, the container being arranged for side transfer loading

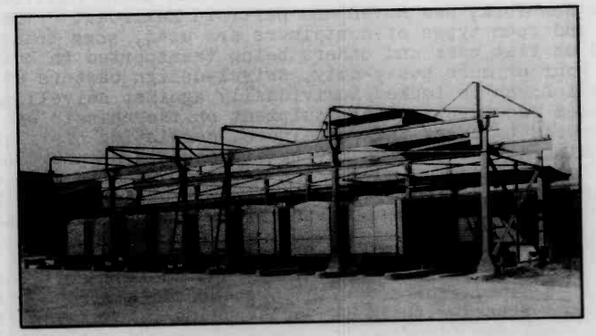
Side Transfer of Container Between
Standard Flat Car and Special Highway Semi-Trailer

Container Being Unloaded to Street Level by gravity
Mt. Vernon Car Manufacturing Co. Container
International Harvester Co. Truck

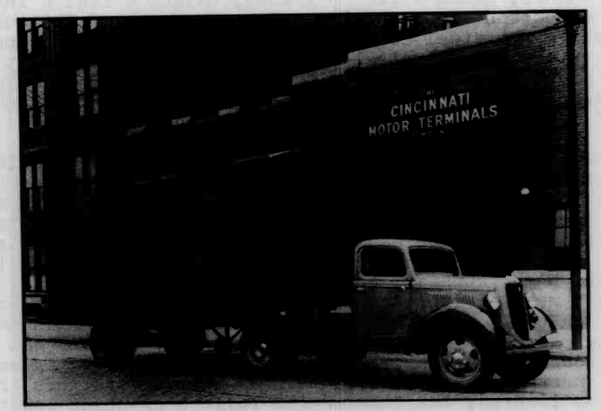
five to a 42-foot car or six to a 50-foot car. The container skid rails are locked to the guide channels on the car at four points by retractable wedge lugs, which are operated from either side of the car by a lever and crank. Within the guide channels on the car are four sets of leaf springs, designed to absorb end impacts transmitted beyond the car draft gear. To transfer the container to a highway vehicle a standard semitrailer has been fitted with auxiliary apparatus costing a few hundred dollars. This consists of two longitudinal channel guides riveted to the semitrailer frame, along which pass two endless conveyor chains. At the rear of the semitrailer is a hinged bridge over which the conveyor links pass, and at the front of the semitrailer is a gear and pinion and speed reducer whereby power is transmitted to the chain through a power take-off from the tractor motor. The semitrailer is backed into position at right angles to the flat car with the channel guides on semitrailer and car approximately in line. The hinged bridge is raised and fastened to special anchorages mounted on the car side sills. Connection is made between the conveyor links and end of container at two points. The container is unloaded from car chassis and by the tractor driver speeding up the motor the container is pulled onto the semitrailer. The container is moved onto the car by simply reversing the direction of motion of the chain. Movement of the container from one vehicle to the other takes 35 to 40 seconds, and the complete transfer from the time the tractor semitrailer arrives on the scene can be done by the tractor driver alone in 3 to 5 minutes. Differences in elevation of several inches between semitrailer guide channels and those on the car are readily overcome in making the transfer, the springs on truck and flat car and the hinged bridge on semitrailer all acting in conjunction to assist the skidding. No difficulty in moving the container loaded with 30,000 pounds of material has been experienced. This container built with a closed all metal body, ventilated and weather tight, with a large door on each of four sides and a water tight roof hatch, and equipped with four hooks at top for crane lifting, would weigh approximately 3,500 pounds, if built of ordinary steel and probably less than 2,500 pounds using alloy steels. The Fitch plan embraces containers of various sizes, such as 10, 20 and 24 feet long, all being 8 feet wide and 8 feet high, designed for all general freight, as well as special bodies for milk, other liquids, perishables and livestock. Electrical control and operation of the highway vehicle transfer mechanism is also being developed as an alternative to the mechanical transmission.

The Cincinnati Motor Terminals Company (B.F. Fitch, President) since 1917 has used more than 250 lift-type containers, 17 feet 6 inches long by 8 feet wide by 8 feet high, for intraterminal truck haul of merchandise between all rail carriers freight stations in Cincinnati, 23 heavy-duty truck chassis being employed. The operation has been very successful.





One of the Container Transfer Stations of the Cincinnati Motor Terminals Company




Intra-City Container and Trucking Unit of the Cincinnati Motor Terminals Company

The Perrin-Walsh, (Roloff, Inc.) system is typical of containers mounted on rollers. The system was used in New York and New England by the Boston and Maine Railroad and the New York, New Haven and Hartford Railroad. Both closed and open types of containers are used, some being carried on flat cars and others being transported in box cars. Four or more heavy-duty, swivel-design casters are used, which can be locked individually against swivelling. The system requires special equipment on the chassis of motor trucks to carry the containers, consisting of tracks and locking devices, which may be attached to standard highway vehicles. Tracks and locking devices are also used on flat cars, arranged to accommodate any size container. The containers are also equipped with lifting rings for handling by crane.

The Security Storage Company own and operate containers of the lift type, equipped with large double-hinged doors at one end and fitted with loops for handling by overhead crane. They are used for transporting household goods, principally between the United States and foreign countries. There are 64 of these containers of which 10 are of aluminum construction, weighing 1,900 pounds, and the remainder are of steel construction, weighing 4,000 pounds, with a weight capacity of 13,000 pounds and outside dimensions as follows: Length 14 feet 9 inches; width 7 feet 6 inches; height 8 feet 2 inches. The aluminum containers have a volume capacity of 700 cubic feet, while the steel containers have 800 cubic feet capacity. There are also 12 all steel containers of 600 cubic feet and 10,000 pound capacity, each with a tare weight of 3,720 pounds and overall dimensions as follows: Length 11 feet 5 inches; width 7 feet 6 inches; height 8 feet 2 inches.

Railway Motor Trucking, Inc., J. F. McGinness, President, has designed and built closed body containers, which combine the roll-off and skid principle. The containers, which are 9 feet long, 9 feet wide, 7 feet 8 inches high, have large double-hinged doors on each of the four sides and load transversely on flat cars. The base of the container, which is 8 inches high, consists of four channels or skid-rails, in which are mounted 12 retractable rollers, 6 rollers to each pair of channels. The rollers, each of which are 7 inches in diameter and 18 inches long, are slightly beveled and are roller bearing equipped. By means of a worm and screw mechanism incorporated in the container base, the rollers are raised or lowered, the four center rollers dropping lower than the others, which facilitates turning and rocking the container and assists in moving it over uneven surfaces.

Refrigerated Containers. Some work has been done in developing refrigerated containers for transport on and in railroad cars. The L.C.L. Corporation has a number of these containers of the leg type with outside dimensions the same as its merchandise container; namely, 9 feet 3 3/8 inches long; 7 feet 2 1/2 inches wide; 9 feet 4 inches high,

Containers Mounted on Standard Flat Car.
Railway Motor Trucking, Inc., J. F. McGinness, Designer

Transfer of Roller Type Containers
Between Flat Car and Highway Vehicle

exclusive of icing hatch in roof. The container has one large single-part door in one end, is thoroughly insulated, can be manipulated by crane as well as lift truck, and may be refrigerated by water ice, solid ice, solid carbon dioxide (dry ice), or Flakice, which is carried just under the container roof, is equipped with temperature control, and has a volume capacity for carrying produce of 260 cubic feet. The container is carried in the same gondola cars as are used in transporting the merchandise containers.

A similar refrigerated container of essentially the same dimensions has been developed experimentally by Mr. R. V. Grayson. The container stands on four legs 13 inches high, and has a triple shell cylindrical tank in the roof equipped with a removable head at one end, the overall height of the container being 9 feet 10 3/4 inches. The overhead tank is charged with solid carbon dioxide. Through the operation of an automatic valve, dampers, ports and a turboblower, the refrigerating gas is circulated and temperature control maintained. The container has a volume capacity for lading of 288 cubic feet.

Major Elihu Church has developed a small refrigerated container to be carried inside of box, express and baggage cars or hauled by any highway truck. The container is made of sheet steel, is mounted on rollers and is 6 feet long; 2 feet 8 inches wide; and 6 feet 6 inches high; with volume capacity of 80 cubic feet; and light weight of 700 pounds. The container is thoroughly insulated, is equipped with temperature control and is designed to use solid carbon dioxide as the refrigerant. Some 50 refrigerated containers have been built and they have been used intermittently in railroad and express service.

Inner Containers. Another type of container, which is effective in handling and transporting certain articles, is designed for carriage inside of railroad or highway vehicle bodies, or within boats or barges. Such containers have small overall dimensions in order to pass through vehicle and plant doors, down warehouse or shop aisles and be easily carried on elevators or conveyors, as well as on industrial hand or power trucks or on industrial trailers. An essential requirement of a small container is that it shall have overall dimensions which permit multiple container units to be stowed within larger containers, or inside of other transport vehicles with a minimum waste of space. Such containers may be single skids or pallets, partly enclosed or with fully closed bodies similar to those on containers previously described.

The simplest form of container is a pallet or skid platform. The former is a double platform, generally of wood, only a few inches high, which can be handled by a fork or finger-lift truck,



or by slings. It is inexpensive, usually of non-returnable construction, and conserves stowage space due to low height. The skid is merely a platform mounted on two runners or four legs, generally with a clearance of 12 inches or more between floor and bottom of platform so that the skid can be handled by any lift truck. Skids are used in many industries and warehouses, each concern having its own design, or purchasing from skid manufacturers each of which have several designs. The skid may be of wood, or metal, or a combination of the two and may have removable or fixed sides composed of slats or solid members. Further additions and refinements result in a closed container. Despite the variety of designs prevailing, much good was accomplished several years ago by the U. S. Bureau of Standards in getting skid manufacturers, shippers and industrial users to agree upon standard dimensions as follows:

Clearance heights, floor to underside of platform, 8 inches or 12 inches. Minimum clearance width between legs or runners, 29 inches. Overall dimensions, horizontal: Size 1 ("Freight Skid") 60 inches long, 42 inches wide. Size 2 ("Stores Skid") 54 inches long, 32 inches wide.

While Size 1 was developed to carry commercial freight in transit and Size 2 is intended primarily for use in handling, storing and distributing railroad and industrial stores, it is possible to carry several units of either size skid in a larger container or demountable truck body of acceptable commercial size without wasting space. Of the five million skids estimated to be in use throughout the country, only a small proportion conform to the two sizes of platforms (horizontal dimensions), although a much larger proportion conform to the standards of clearance height and width between runners or legs. Many of the skids are of temporary construction, of wood, costing $2 to $5 each. Others are more substantially built, costing from $8 to $25 each, depending upon design and capacity. Substantial all-metal skids of corrugated steel for storing many rough commodities cost from $3 to $8 each. It is estimated that there are at least 250,000 hand-lift trucks and 50,000 power-lift trucks in use throughout the country handling skids, pallets and packaged materials. As a variation of the permanent, well-constructed skid one finds the four-wheel industrial truck in which ball-bearing casters, rollers and wheels replace the skid-runners or legs. Such trucks are extensively used at freight stations and industrial plants, being manipulated either by hand or in "trains" pulled by an industrial tractor. A well-built, four-wheel truck or trailer costs $60 or more, is subject to considerable maintenance expense, particularly if abused, is difficult to fasten securely within a vehicle, and so represents quite expensive equipment if used in place of a skid for shipment inside a larger container or other transport vehicle.

The purpose of shipping goods on skids is, of course, to eliminate expensive handling and rehandling of individual pieces, as well as to speed up handling and shipping, move goods in lots suitable to commercial requirements or production schedules and reduce the cost of packing, storing and distributing products. The saving to industry, through a nationwide use of standardized skids or similar devices to be used within plants as well as between shippers and customers, might easily amount to more than the total transport charges now paid by shippers.

The containers described in the following paragraphs are the ones brought to the Coordinator's attention. While there are undoubtedly many others in actual use, the ones mentioned here cover the general range of "inner" containers.

Charles C. Stetson has submitted specifications of the Ajax all steel container, which is designed especially for handling l.c.l. commodities. The unit is 7 1/2 feet long; 4 feet wide; and 6 1/2 feet high; has a volume capacity of 180 cubic feet; a load capacity of 3,250 pounds; and a light weight of 1,700 pounds. The container has one end door, 6 feet by 3 feet, and is mounted on skids, which permit handling of the container by hand or electric lift trucks. Two of the units fit abreast in a standard box car, and they are fitted to lock to the end of the car and to each other. This assists in bracing the load, and the skids are roughened to assist further against shifting in transit.

Church Freight Service (Elihu Church) has built and operated containers designed particularly for merchandise shipments. These containers have the same outside dimensions, and are of the same construction as the Church refrigerated containers except for the omission of insulation and refrigerating equipment. The merchandise container is 6 feet long; 2 feet 8 inches wide; 6 feet 6 inches high; weighs about 400 pounds; has a volume capacity of 90 cubic feet; and is of steel construction mounted on rollers. Twenty of the containers load in a 40-foot box car.

Other Containers. The American Car and Foundry Company has designed and built numerous containers, having furnished containers of the lift-van type for the Anglo-American Lift Van Company as early as 1904.

Mr. H. W. Kirchner has designed and patented a system for handling containers by means of specially constructed ramps. At terminals ramp tracks would be built parallel and outside of the railway tracks, and approximately at 10 foot gauge, about level with a flat car platform. The ramps would have a concave rail, capable of taking a 4 inch ball, the ball acting as a caster on the container, and revolving in any direction. The container would be wider than the flat car with an overhang of about 5 inches on either side.



A flat car loaded with containers would be pushed between the ramp tracks, the casters catching the concave rails of the ramps and following them, eventually clearing the flat car, and leaving the containers on the ramp. In loading the operation would be reversed. The same plan would be followed in loading and unloading containers onto trucks. Movement from railway ramps to truck ramps at right angles would be accomplished by placing movable bridges in the proper position, a motor truck or tractor furnishing the power to roll the container over the bridge.

George L. Bennett has patented a design for a container which contemplates construction of units of 6,000 and 10,000 pounds capacity with an estimated tare weight of 2,200 and 2,600 pounds, respectively.

The containers would be mounted on rollers, one set to be driven by hand lever and gears, and the other set arranged with steering device. The traction rollers could be locked by meshing gears.

Roger H. Clapp has patented a container equipped with wheels which may be retracted by hand under load of 10,000 pounds. No specific dimensions or capacity are given.

Edgar A. Stoll has patented a container with flanged wheels to be handled manually on tracks, to be built on the bodies of railway and highway equipment. The plan proposes various sized units.

P. J. Backus has patented what is termed a "Tray Car", for the loading of open, low flat containers in tiers on a car specially equipped for the purpose, a shelf arrangement permitting the sliding in and out of the containers, which would be handled to and from a truck chassis by means of a winch or crane. The trays would be used for loading of bulk commodities and each would have a capacity of two to three tons.

Container Transfer Equipment. Highway trucks, tractors and semitrailers of special design or fitted with auxiliary devices to effect transfer of containers between rail and highway vehicles have been specifically described in connection with the following container operations: The Milwaukee Electric Railway and Light Company; Acme Fast Freight, Inc.; Mount Vernon Car Manufacturing Company; B. F. Fitch skid container.

Supplementing the skid transfer, or as a substitute therefor, Mr. Fitch has developed, and has in operation in connection with the Cincinnati Motor Terminals Company, a light-duty gantry crane with push-button control cable, composed of standard automotive, mechanical and electrical units mounted on a structural bridge, which cost approximately

$1,500. A structural steel runway with foundations, for use with the crane in transferring demountable bodies, has been installed at a cost of $20 per foot of runway length. Such a development with the relatively low capital expense involved encourages overhead crane installations by industrial concerns and transportation agencies, even where traffic volume is quite light.

N. A. Ludington has designed a transfer device to be attached to a truck chassis used in handling containers, but it is limited to containers of the leg type, or else requires special construction of the railroad car. The device consists of a sliding frame resting upon the chassis, which is inserted under the containers. This sliding frame is equipped with elastic expansible members which are inflated by air, and which raise the containers clear of the car floor when the sliding frame is drawn forward and places the container in position on truck. The expansible members are then deflated, and the container settles down on the truck when the slide is withdrawn and the operation repeated. To transfer containers from truck to car, the operations are reversed. The height of the truck platform is adjusted by hydraulic cylinders located at rear of truck.

Corby, Tunberg, Inc. have designed equipment for the handling of various sized containers, which consists of an adjustable four-leg assembly which is to be attached to the container as a temporary fixture. The legs,which apparently operate similar to a screw jack, may be mechanically raised or lowered singly or as a unit from one point. The legs would be equipped with swivel joints and could be fitted with wheels to provide mobility.

A design for a ball-bearing, four-wheeled "shifter" adjustable to varying heights is also proposed for the handling of the containers to and from railway equipment. The leg assembly mentioned would permit the "shifter" to be placed underneath the container, or removed therefrom.

For road haul a heavy-duty, four-wheeled, pneumatic-tired "dolly" is proposed to be locked to the rear underframe of the container, which would then be handled as a semitrailer by a tractor or truck.

R. J. Needham proposes a plan to fasten light weight rails along the side sills of flat cars to provide a track for a travelling self-propelled crane, which would be utilized to load and unload containers. The crane would travel the entire length of the train. The flat cars would be provided with pockets, in which container legs would fit.

R. L. Pryor has submitted a plan for loading and unloading wheeled containers to and from flat cars and trucks by means of inclined platforms and tracks, the platform and railway



tracks being built at about a ten degree angle to permit the rolling of containers on and off of flat cars by gravity. Small containers would be loaded crosswise of the car; and a turntable arrangement (part of the permanent equipment of each flat car) would be swung laterally for the loading of large containers. After running a container onto the turntable, it may be swung into position, longitudinally on the flat car.

Ralph F. Mattox has designed a mechanism to be incorporated in the chassis of a truck or semitrailer, which operates as a moving table to transfer containers between rail car or fixed platform and highway vehicles. The design provides for vertical movement of the mechanism so that differences in elevation of platforms or vehicle floors can be equalized. It is proposed to utilize the truck or tractor power plant to operate the transfer mechanism by means of a power take-off.

Containers Abroad. Outside of the United States the principal use of containers in transportation service is found in Great Britain and Continental Europe, where containers have been in use at least since 1892. Each European country has developed its own types of containers, but to facilitate interchange of containers between nations, the International Container Bureau recommends standard specifications for various types of containers which move in international traffic.

The gross weight (load plus tare) should not exceed 5 metric tons (metric ton = 2204.6 pounds) for heavy-type containers, and 2.5 metric tons for containers of light type with maximum overall measurements as follows:

Heavy Containers

| | No. | Length | Width | Height |
|---|---|---|---|---|
| Closed Type, | 62 | 10 ft. 8 in. | 7 ft. 1 in. | 7 ft. 3 in. |
| | 42 | 7 ft. 1 in. | 7 ft. 1 in. | 7 ft. 3 in. |
| Open Type | 61 | 10 ft. 8 in. | 7 ft. 1 in. | 3 ft. 7 in. |
| | 41 | 7 ft. 1 in. | 7 ft. 1 in. | 3 ft. 7 in. |

Light Containers

| | | | | |
|---|---|---|---|---|
| Closed Type, | 22 | 7 ft. 1 in. | 3 ft. 5 in. | 7 ft. 3 in. |
| | 201 | 7 ft. 1 in. | 3 ft. 5 in. | 3 ft. 7 in. |
| Open Type | 21 | 7 ft. 1 in. | 3 ft. 5 in. | 3 ft. 7 in. |

The conditions require that all containers be fitted with ventilators which must not permit rain to enter. Also that all containers must rest on runners, (longitudinal) and that these runners, (skids) have metallic surfaces.

Great Britain. A total of 9,400 containers were in service on the British Railways in January 1934. The Great Western Railway owned 1,500; The London Midland and Scottish Railway 5,000; The London and North Eastern Railway 1,600; and the Southern Railway 1,300.

The approximate number and dimensions of the various types in service are as follows:

| Number | Type | Length | Width | Height | Capacity Tons |
|---|---|---|---|---|---|
| 2,070 | Closed | 7 ft. 3 in. | 6 ft. 6 in. | 7 ft. 3 in. | 2.5 |
| 3,010 | Closed | 13 ft. 8 in. | 6 ft. 7 in. | 7 ft. 6 in. | 4. |
| 1,315 | Open | 6 ft.11 in. | 6 ft. 6 in. | 3 ft. 4 in. | 3. |
| 1,600 | Open | 13 ft. 8 in. | 6 ft. 8 in. | 3 ft. 8 in. | 4. |
| 1,130 | Insulated | 13 ft. 6 in. | 6 ft. 8 in. | 7 ft. 6 in. | 3.5 and 4. |
| 200 | Furniture | 15 ft. 3 in. | 7 ft. 0 in. | 8 ft. 0 in. | 3. |
| 75 | Tanks, Hoppers and Miscellaneous. | | | | |

Units with a capacity of 10 tons for carrying heavy raw material and brick are now under test.

These containers are handled principally by cranes and the number of stations equipped with cranes is comparatively large, little attention being paid in Great Britain to containers fitted with wheels or rollers or constructed for use with traveling elevators.

Automobile cranes with carrying capacity up to 6 tons have been put in service and have proven successful, their advantage being that they can be used in the station or outside. Rails are sunk flush with street level, so that automobile cranes can easily cross tracks at stations.

Early types of containers were of wood construction, but more recent ones are built of steel with the view of increasing strength and durability. Aluminum alloys have been considered, but the advantage of low tare weight seems to be counterbalanced by unusually high initial cost, in the opinion of British railway authorities. Most closed types of containers have doors in both narrow sides, usually three-leaf doors, of which the bottom leaf covers the whole width and swings down. As a rule only the insulated containers have two folding doors.

The British railways have operated door-to-door and motor transport service for some years, and have found that container service reduces the total cost of transportation.



GREAT BRITAIN

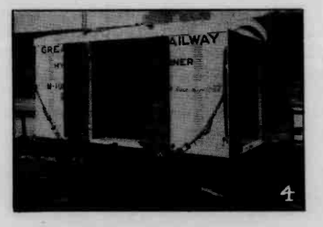


Figure 1 - Steel Container for Transport of Stone and Coal, London Midland & Scottish Railway. Figure 2 - Closed Container of Steel Construction, London Midland & Scottish Railway. Figure 3 - Steel Container of the London & North Eastern Railway. Figure 4 - Container for Transporting Meat - Great Western Railway.

The smallness of British trucks apparently restricts the size of the containers. The use of a larger number of tractors with trailers is expected to achieve a material reduction in the cost of container traffic.

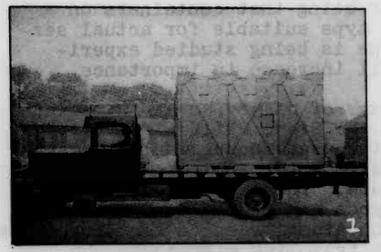
France. The number of containers owned by the seven large railway companies on May 1, 1933 was 368, and it was contemplated that 300 more containers would soon be put in service. In addition, there were 2,220 privately owned containers being used chiefly for transporting the following commodities: Furniture, ceramics, crockery, chinaware, glassware, textiles, papergoods, flagstones, building material, heating apparatus, bakery goods and meat.

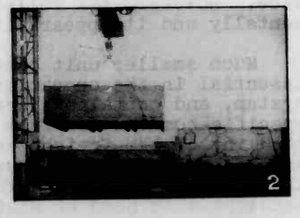
The capacity of these containers varies from 1/2 ton to 5 tons and in a few instances exceeds 5 tons, the largest ones being used for the transport of sugar and having a capacity of 10 tons. The overall dimensions also cover a wide range, approximating 5 to 17 1/2 feet in length; 2 to 8 1/2 feet in width; and 3 1/2 to 9 1/2 feet in height. The open containers are 2 1/2 to 8 1/2 feet high.

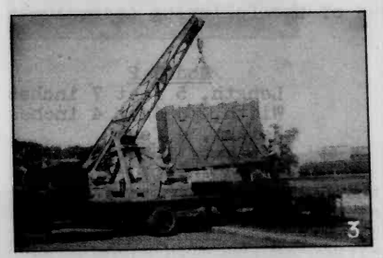
The containers are principally of flat bottom type, or flat bottom resting on skids. Cranes both mobile and stationary are employed in most instances for transferring,and the low drop sides of the small French cars are the only protection other than friction on the floor against shifting in transit. Three leaf doors in both ends are quite common, the lower door extending the entire width and dropping down. Wooden insulated containers, employing ordinary or "dry ice", are successfully used for the transport of perishable goods. With the exception of the double walled insulated and the tank units for the transportation of milk, many of the containers are collapsible for return movement when not loaded.

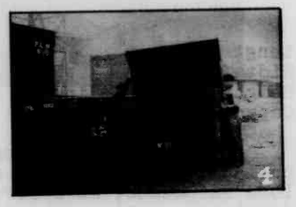
Germany. In 1934 there were 111 large containers owned and being used by the State Railways in Germany, and also 80 steel containers being used for the exclusive transport of lime and limestone. Two types have outstanding features; one being mounted on retractable wheels, swivel operated; the other having wheels which can be deflected. The wheels are pneumatic tired, so that the containers are designed for road transport by horse or as a truck trailer. The wheels are moved by means of a hand winch. The present high cost of this type of mobile container prohibits its general use. The container is made of stiffened steel and is approximately 8 feet 6 inches long; 7 feet 4 inches wide; and 9 feet high (container only). It weighs empty about 2 1/2 tons and carries a load of 4 tons. In spite of size and weight, the containers are very mobile, and when carrying a light load can be moved by hand. Loading at points not at platform level is accomplished by means of hand winch mounted on the flat car. Three units may be loaded side by side on a flat car.

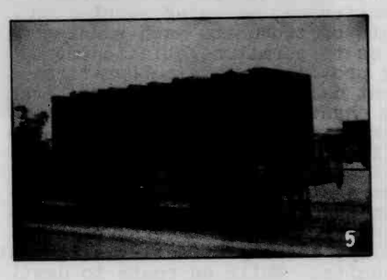




FRANCE

Figure 1 - Type 62 Container on Truck. Figure 2 - Crane Transfer of Type 61 Container. Figure 3 - Transfer of Type 62 Container by Motor Truck Crane. Figure 4 - Collapsible Comtainer of the Paris-Lyon-Mediterranean Railway. Figure 5 - Type 62 Containers on Rail Car. Figure 6 - Transferring Milk Containers.

The German State Railway disapproves of the principle of designing large containers for handling by cranes or traveling elevators only, the belief being that containers on their own wheels are the only type suitable for actual service. However, the roller type is being studied experimentally and it appears it will increase in importance.

Much smaller unit containers of all types are considered essential in the operation of the State Railway's l.c.l. system, and containers are being used increasingly to carry specific commodities from consignor to consignee without handling of the freight en route. These small containers are of both open and closed types and can be loaded through the doors of box cars. The containers rest on legs to permit handling with hand or electric traveling elevators. On October 1, 1933 there were 6,500 small containers in use. They are of two principal sizes of the following approximate dimensions:

| Model 1 | Model 2 |
|---|---|
| Length, 5 feet | Length, 5 feet 7 inches |
| Width, 3 feet | Width, 3 feet 4 inches |
| Height, 3 feet 4 inches | Height, 4 feet |
| Capacity, 1 ton | Capacity 1.2 tons |

In Germany, beginning in the fall of 1933, store-door collection and delivery service was extended to include carload shipments, as a service to shippers without side-track facilities. Since the inauguration of the plan 6,300 carloads were handled in a 14-month period. In this operation the entire freight car is transferred, it being mounted on highway chassis, which consists of two units each running on eight wheels, so articulated as to permit negotiation of sharp curves. The cushioning provided by the rubber-tired wheels is sufficient to prevent damage to the highways, even under heavy load. Each truck chassis is provided with auxiliary connecting and steering rods, which permit the two units to be widely separated for the handling of long cars. In transferring freight cars from railway to highway, the truck units are backed against a stub end track which is at the same level as the rails on the truck units. A form of hinged rail, located at the end of the stub tracks, permits the tracks to be swung laterally, thereby effecting alignment with the tracks on the truck units. While en route to destination the rail car is braced with tie rods attached to the truck chassis. Cars of 60 tons capacity have been successfully handled. The speed limit on highways has been held strictly to 10 miles per hour.

Italy. Following the resolution of the International Container Committee, recommending the appointment of national groups, on March 3, 1932, the State Railways of Italy created the S.I.C.O.N. with a capital of 3,000,000 lire, the company to be the sole agent of the railways on all matters relating to containers, and it has acquired since the monopoly of container transport of all merchandise by rail.



GERMANY

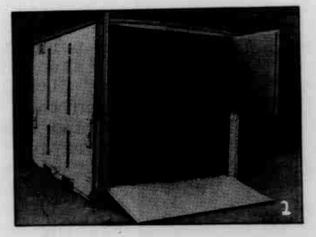


Figure 1 - Type 62 Standard Container Open, with Rollers Retracted.
Figure 2 - Small, Wheeled Container Being Handled by Crane.
Figure 3 - Container with Swivelling and Retractable Wheels.
Figure 4 - Rubber Tired Container with Deflected Wheels.

The containers in experimental use on the State Railways of Italy conform closely to the specifications of the International Container Bureau, except that they are mounted on metal legs to readily permit the handling by traveling elevator, which method has been adopted for general use, although they may be temporarily fitted with rollers to provide mobility.

The company has been particularly successful in perfecting a refrigerator container which is sufficiently insulated to insure a constant temperature level over a period of five days. This container has a capacity of two tons, in addition to carrying approximately 600 pounds of ice in two grilled boxes. The lading is precooled by means of a mobile refrigerating unit developed for the purpose. The unit consists of a set of ammonia refrigerating machines developing 70,000 units of cold per hour, enclosed in a container, (10 feet 8 inches long; 7 feet 1 inch wide; 7 feet 3 inches high) weighing less than 5 tons, including weight of container. A second container of the same size holds the cooling water of the compressor, as well as the equipment required for the refrigeration of the water. A third container of the same size contains an ice plant producing approximately seven tons of ice per day, or sufficient to ice 24 containers. The method is reported to be cheap and practical.

Austria. In Austria a number of companies are using their own containers for rail transportation and milk containers have been used for some time, railway cars and trucks being equipped with saddle shaped bases for their carriage.

Egypt. The Egyptian State Railways have been using furniture containers of wooden frame construction with plywood covering to reduce the weight. They measure approximately 12 1/2 feet long; 6 1/2 feet wide; and 8 feet high. Road transport is by tractors with semitrailers, the containers being handled by crane.

The use of containers in other European countries has not been widely developed, but expansion is considered based on the experience gained through their use in other countries

Highway Vehicles on Flat Cars. The oldest operation which carries highway semitrailers on flat cars is that of the Chicago, North Shore and Milwaukee Railroad, between Chicago, Milwaukee and intermediate stations. The semitrailers have closed bodies approximately 16 feet long; 7 feet wide; 6 feet high; of 600 cubic feet capacity; and are loaded either 2 or 3 semitrailers per flat car. At the Chicago railhead there is a single stub-end track accommodating several container cars with a ramp from street level to the height of car floor at the end of the track. Ordinary flat cars with special attachments for securing semitrailers are used. A highway tractor backs a semitrailer up the ramp



ITALY

Figure 1 - Loading a "Scion" Refrigerating Container on Railway Car Using Electric Lift Truck.

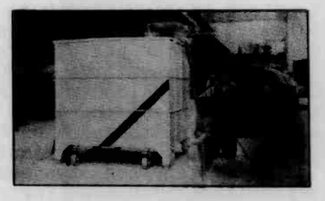


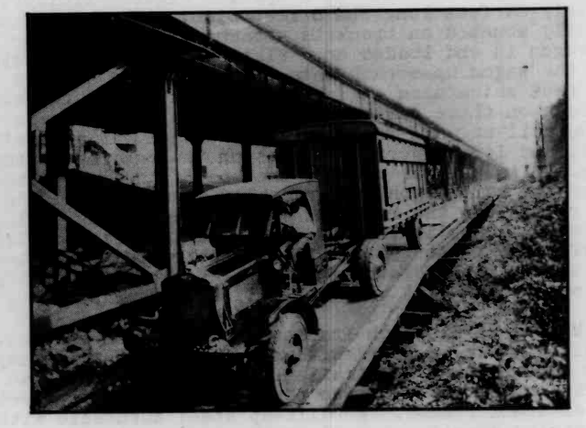
Figure 2 - "Scion" Refrigerating Container Refilling with Ice.

Figure 3 - Loading "Scion" Container with Perishable Fruit.

onto the flat car and perhaps over several cars until the last empty is reached, the highway vehicles being assisted in "tracking straight" by guides attached to car decks. The tractor then uncouples, returns over the empty cars, goes down the ramp and repeats with another semitrailer. Considerable difficulty is oftened experienced in getting the semitrailer onto the first car with all tractor and semitrailer wheels parallel. It is also necessary, of course, to load the semitrailers on the cars in station order, if unnecessary switching is to be avoided. At the Milwaukee terminal the transfer layout is much better, consisting of a fantail of stub tracks with the highway at the level of the flat car decks. Semitrailers are handled on and off the cars much more easily and can be loaded as they arrive on any one of several tracks. In addition to transporting their own semitrailers, the railroad handles any standard highway vehicle less than 32 feet long at stated rates, based on the size of vehicle and load carried. A number of shippers make regular use of this service. While the flat cars are equipped with special clamping devices to secure the railroad's semitrailers, other vehicles are fastened to the cars by means of chains, turnbuckles, rods and wedge blocks. It sometimes takes two mechanics (not including the vehicle driver) ten to fifteen minutes to secure one semitrailer to a flat car. A well-developed terminal layout is essential to speed and economy in loading semitrailers onto cars.

A recent operation in which highway semitrailers, carrying merchandise freight, are transported on flat cars is that of the Keeshin Motor Express Company operating overnight service between Chicago and the Iowa cities of East Moline, Moline, Rock Island and Davenport, as well as between Chicago and Peoria, Illinois, over the Chicago, Rock Island and Pacific Railroad lines. Some 140 semitrailers costing $1,600 to $2,000 each, and weighing 5,500 to 7,000 pounds; with bodies 20 feet 7 inches long; 7 feet 2 inches inside width; 6 feet 6 inches inside height; of 910 cubic foot capacity; 20,000 pounds load limit; and 13,900 pounds average load, are in regular service. Standard flat cars are used, the semitrailers being loaded two to a 46-foot car, the cars of 58 tons nominal capacity having a light weight of approximately 21 tons each. The tare weight of a car carrying two semitrailers is twice the average payload transported. For rail movement chains permanently fastened to flat cars are secured to the semitrailer bodies by hooks, which engage lugs on the semitrailers, the chains being drawn tight by turnbuckles. Chock blocks are used to prevent shifting of semitrailers on cars. Each flat car is equipped with a steel tail gate or apron to provide a continuous runway between flat cars. The average length of time required to pick up a semitrailer with tractor, place it on a flat car and drive tractor off the car, is six minutes, while to fasten the semitrailer

Semi-Trailers Mounted on Specially Equipped Flat Cars.
Chicago North Shore & Milwaukee Railroad Company



Placing Highway Semi-Trailer on Flat Car.
Chicago North Shore & Milwaukee Railroad Co.

to the flat car takes about five minutes with two men doing the work. To effect the transfer single and multiple stub end tracks are used with ramps of flat car height, having a 40-foot runway and 50-foot incline built adjacent to the tracks.

A similar rail-highway service has been operated between Chicago and St. Louis by the Alton Railroad, which transported highway vehicles of any truckman who desired to use the service at a stated charge per truck, the vehicles being loaded on flat cars. The operation was not successful.

Special railroad cars have been designed to carry semitrailers and trucks, and special highway vehicles to be carried on railroad cars are advocated by some inventors. That such equipment is not in commercial use may be due to the fact that the designs proposed necessitate extensive changes either in highway or railway rolling stock, or perhaps both.

The oldest system utilizing combination rail-highway vehicles is that of Joseph C. Bonner, which had initial tests in 1895, and has had actual tryouts on electric railways in and about Toledo, Ohio, and on the Isle of Man. The Bonner Rail-wagon consists of a special highway trailer, approximately 21 feet long and 8 feet wide, with wheels independently mounted on brackets attached to the trailer frame. A rail-wagon is end loaded on a flat car of special design by hauling the wagon up a ramp onto tracks, having a gauge of about 7 feet which span the railroad track. When the wagon is in place on these raised tracks, the railroad car is run under the rail-wagon. The clearance between car and rail-wagon is small, and lever-operated clamps on the car engage the rail-wagon. As the car reaches the end of the ramp, the wheels of the rail-wagon are gradually lowered until the chassis rests upon the railroad car. In unloading rail-wagons, the process is reversed. The railway car consists of an underframe without center sills, constructed with side-bearing trucks which because of the necessity of reducing overall width are built with journal bearings inside.

The Merchants Despatch Transportation Company has developed a special flat car equipped with two turntables to transport two milk tank highway semitrailers. The rail unit is an all steel flat car, mounted on two passenger-type, four-wheel, cast-steel truck frames. A built-up steel turntable with roller bearing wheels, secured at the center with a pin extending through the floor plate of the flat car, is mounted near each end of the car. The turntables revolve on a circular rail 4 feet 4 inches in diameter, welded to the car floor plate. Stationary wheel blocks, riveted to the turntable at one end act as trailer stops when loading, after which movable wheel blocks are placed in front of the rear wheels. After a semi-trailer is placed on the turntable, the tractor uncoupled, and

Inter-City Movement of "Keeshin" Semi-Trailers on
Flat Cars of Chicago, Rock Island & Pacific Railway Co.

Highway Freight Carrying Unit.
Keeshin Motor Express Company.

the unit turned to the proper position for rail travel, a movable frame jacking device located near the middle of the car centers and raises the load from the jack wheels of the semitrailer, allowing them to ride free. Two screw jacks located on the flat car near the end sill also raise the load off the rear axle, so that the rear tires carry only the weight of the rear axle assembly. The entire tank unit is secured against side sway and end motion, while in rail movement by rods with turnbuckles running diagonally from each corner of the semitrailer chassis to side sills of the flat car. To load and unload semitrailers, it is necessary to have a platform or runway at the height of the turntable deck and a ramp leading to the highway or street surface. The milk tanks each have a capacity of 2,050 gallons, and are mounted on standard highway semitrailers.

Mechanical Handling Devices (Francis System) has designed semitrailers to be carried two per flat car, the rear axle of the semitrailer fitting on a solidly mounted block on the floor of the flat car. The mountings of the semitrailer drop leg wheels are of the swivel type, permitting the tractor to push the forward end of the semitrailer in proper location on the flat car, and also pulling it off the flat car onto an elevated platform. Semitrailers can be end loaded on a flat car at a stub track having a ramp, or can be side loaded by constructing a platform at the height of the car deck wide enough to permit manipulation of tractor and semitrailer and equipped with a ramp at each end. The tractor should have a cable-operated winch to assist in shifting semitrailers between platform and flat car.

Joseph F. Johnson has designed a revolving car deck for the loading, unloading and carriage of complete trucks, trailers or semitrailers on well type railway cars. The device mounted in the center of the car operates as a turntable and is a part of the permanent equipment of the car. The turntable, which is constructed with two hinged drop ends to be used as ramps, is rotated laterally for loading or unloading highway vehicles. When loaded, the turntable is swung back with the vehicle in longitudinal position on the car and locked. Either one or two highway vehicles may be accommodated, using one turntable per car.

Karl J. Bayerl has designed a special railroad car for carrying highway semitrailers, the device consisting of a means for loading semitrailers sidewise on a drop frame railroad car, the highway wheels being loaded in the well portion of the car, and the fifth wheel of the semitrailer secured to a platform at the end of the car.



H. C. Tully has devised a plan for transporting semitrailers on flat cars which have been equipped with runways sunk below floor level on either side to provide a gangway for trailer wheels. The trailers would be loaded and unloaded over portable ramps with a crawler tractor furnishing the power, the operation being accomplished in a manner very similar to that used in loading circus wagons.

Dual Service Vehicles. Another type of equipment which is designed to coordinate rail and highway, but not waterway, transportation service contemplates a freight-carrying vehicle which will operate with equal facility on railroad tracks or roadway surface. Many ingenious ideas have been advanced, some of which are in the blueprint stage, others consist of small scale models, and a few have been built as full size experimental vehicles. To date none of the vehicles described in the following paragraphs are in commercial operation.

Hendrikson-Mead Engineering Company has developed a 6-wheel, dual rear axle, heavy-duty, road-rail unit, to be equipped with dual wheels on common axles. The unit is rated at 40,000 pounds gross weight and is designed to pull two 32,000 pound trailers. The flanged rail wheels, inside the vehicle wheels, are 34 inches in diameter and made of high-grade alloy steel. The pneumatic tires used in highway travel are removed when the vehicle is railed and replaced at rail destination. The vehicle is equipped with couplers and provision is made for continuous power brakes and all safety appliances. The unit is railed or unrailed at any surfaced crossing.

The Hughes Roadrail Equipment Corporation has designed a semitrailer with dual rear axle and dual service wheels. Each wheel consists of a flanged steel wheel for rail travel, while outside of and concentric with each flanged wheel is a full pneumatic tire which is dismounted when the semitrailer is on the rail, but which supports the load on the highway. On the semitrailer frame over the rear axle is mounted a fifth wheel, so that semitrailers can be connected to form a train for the rail haul. The semitrailer body is approximately 24 feet long; 8 feet wide; and 8 feet high; of 20,000 pound capacity; the rear end of the body being 5 feet 8 inches ahead of the rear end of the semitrailer in order to permit coupling of another unit with the fifth wheel. Both air and hand brakes are provided on each semitrailer and the overall length of semitrailer attached to a cab-over-engine design tractor is 38 feet 9 inches.

D. W. Main has designed the "Main Road-Rail Attachment" for trucks and buses which has been tested successfully. The attachment consists of two pairs of pilot wheels mounted at

the front and rear of the truck. These wheels, which are operated by a lever from the driver's cab, can be retracted about 5 inches above the ground for travel on the highway. On the rails the front pilot wheels carry most of the front-end weight, and the rear pilot wheels enough weight to hold the vehicle to the rails and prevent swaying. The regular truck tires rest on the rails and provide traction, the same as they do on the highway. The vehicle can be driven on or off the rails at any surfaced crossing.

The Twin Coach Corporation has developed a highway-rail vehicle, which employs pilot wheels fore and aft of each of the regular pneumatic tired truck wheels. The pilot wheels are lowered to within 1/4 inch of the rails, when the unit operates as a rail vehicle, and are raised about 4 inches above the ground, when the vehicle is operated on the highway. The flanges on the small, rubber-insulated pilot wheels are about 1/2 inch deeper than standard steam practice. The flanges serve to guide the front wheels of the vehicle instead of locking them rigidly. The face of the pilot wheels does not touch the rails, although the flanges touch occasionally. In case of puncture the vehicle would drop 1/4 inch and the pilot wheels, which are mounted with Timken bearings would carry the load. The vehicle has been successfully operated under test for some time.

W. A. Hutton has designed and patented a road-rail unit equipped with rigid dual wheels mounted on a common axle. The flanged wheels for rail service, being fitted inside the highway pneumatic-tired wheels, would be slightly smaller.

The plan includes an inclined platform for track approach, and a platform built flush with the rails with ramps parallel to the rails at either end to facilitate railing of the vehicles. The ramp approach and surfacing plan would be carried out at switches, frogs, etc., so that the highway wheels would clear such obstructions.

C. C. Nugent has in experimental use a truck equipped with flanged steel wheels mounted on the same axle, but inside of the regular pneumatic tires. When operating on a railroad track the tires are almost entirely deflated, so that the vehicle passes readily over switches at a speed of 40 miles per hour. On the highway with the tires inflated to normal pressure the flanged wheels clear the road surface.

W. H. Wilcox has designed and patented the "Wilcox Road-Railer" which embodies two sets of wheels. The wheels operate on a common axle, the highway wheels outside. Both sets of wheels are mechanically retractable by means of a complicated hub mechanism operated with compressed air. For road travel the pneumatic-tired wheels are shifted close to



the flanged wheel. On the rails the pneumatic-tired wheel is shifted outward and upward for clearance of the flanged wheels, and to clear track switches, etc. The unit is railed and unrailed at surfaced crossings.

E. O. Keator has designed the "Duplexmobile", a road-rail unit with dual wheels on a common axle, the flanged wheels being fitted inside the regulation truck wheels. The pneumatic-tired truck wheels, which remain in normal position at all times, would require the readjustment of frogs, switches, etc., which feature has been provided for in the plan. The unit is driven on or off the rails at surfaced crossings.

C. S. Nelson designed, patented and has operated under test the "Nelson Roadrailer", which employs dual wheels for operation on highway and rails. The flanged wheels are fitted inside the regulation truck wheels. The wheels operate on a common eccentric axle and either set are retractable by a mechanism operated from the driver's cab. Railing is accomplished at surfaced crossings.

Dabney P. Owens is the inventor of a dual purpose wheel, which provides a steel flanged wheel for rail travel and a pneumatic-tired wheel for highway use. By a mechanism not described, the pneumatic wheel is retracted and fits into the recessed flanged wheel for rail travel. By the same device it is forced out and lowered to contact the road for highway travel. The latter operation raises the flanged wheel 4 inches from the ground.

K. Y. Messick has patented the "Messick" rail-highway, semitrailer unit, which embodies dual service wheels, flanged for track and pneumatic for road. Dual axles are employed, it being possible to raise or lower both the rail and highway wheels, or they may be adjusted so that both sets of wheels may be used on the rails. A shock-proofed fifth wheel attachment is mounted on the rear frame to permit coupling of additional units. The trailers would be handled by their own motor unit, or coupled to the rear of a train on the rails. The proposed semitrailer would be 20 to 33 feet in length, weighing 4 to 5 tons and have a weight capacity of 11 to 13 tons. The estimated cost is $1,200 to $2,000, depending on the load capacity.

W. J. Laffey submitted a patented design for a convertible truck wheel, for use on both highway and railway. He has also patented a truck deck which is adjustable to variable heights. Details of the inventions were not submitted.

Albert W. Gustafson has patented a combination auto-driven railway car and truck. The plan proposes that an auto truck, loaded on a flat car, and with rear axle suspended on jacks to

clear the wheels from floor level, be employed to propel the railway car by means of two sprocket chains, engaging sprocket wheels fitted to the real wheels of the truck and two aligned sprockets on railway truck axle.

Courtney L. Moore is sponsoring for a client a 4-wheeled, patented trailer, equipped with axles that lock automatically on specially designed 4-wheel rail trucks, one truck under the front and one truck under the rear axle of the trailer. The rail trucks are equipped with continuous air brakes, provision is made for necessary safety appliances, and couplers are mounted on the trailer. The design contemplates that trailers would be handled as regular equipment in a rail train. A ramp straddling the rails would be provided for running the trailers onto and off the rail trucks.

Northrup, King and Company has designed a semirail car which operates as a semitrailer on highways. For rail operation it is transferred by means of a ramp to specially designed railway trucks, so that the vehicle becomes a miniature freight car, the underframe of the vehicle becoming the underframe of the car with columns on the railway trucks engaging bolsters on the semirail car. The car is equipped with an automatic coupler at one end, but there is no provision for continuous power brakes or for safety appliances.

J. H. Rathmell has devised a plan of providing a track of concrete or wooden construction parallel to present railway tracks, and immediately adjacent for the operation of highway vehicles.

The vehicle would be fitted with a steel flange on the outside of each wheel, immediately above the tire, which would contact a metal guide rail which would be a part of the proposed vehicle track.

Charles H. Tomlinson has designed a combination rail-highway vehicle to be operated on either highways or remodeled railroad tracks. The plan calls for wooden stringers or runways of concrete or asphaltum to be placed outside of and level with the top of rail and of a width that permits operation of vehicles equipped with dual pneumatic tires. A disc on each wheel which serves the purpose of a flange engages the gauge side of the rail and guides the vehicle when running on rails. When the vehicle is on the highway the disc is raised. A form of articulated train is suggested, but the plan may be used for coaches, tractors and semitrailers, or for truck and trailers.



## 84. Weight of Transport Vehicles

Railway

The railways owned on December 31, 1932 approximately 2,100 thousand freight cars in addition to which there were over 250 thousand privately owned freight cars. Of this total number, approximately 44 percent were box cars with an average weight of 21.5 tons, and an average load capacity of 50 tons each; about 4 percent were flat cars with an average tare weight of 17 tons and an average load capacity of 56 tons each; about 4 percent were stock and poultry cars with an average weight of 19.5 tons and an average load capacity of about 45 tons each; about 37 percent were gondola and hopper cars with an average weight of 21.2 tons and an average load capacity of 66 tons each; about 5 percent were tank cars of which less than one tenth were owned by railways; about 6 percent were refrigerator cars of which approximately one sixth were owned by railways; having an average tare weight of 27.5 tons and an average load capacity of 38 tons each.*

The loaded car days aggregated about 341 thousand per day, or approximately 14 percent of the total car equipment.#

The average tare weight of the cars was 21.5 tons per car; the ratio of dead weight (cars and locomotives) to net tons was approximately two to one. The average load per car was 24 tons; excluding l.c.l. traffic, 34.5 tons.ø The average load of box cars was 25 tons; and of open top cars, 52 tons per car; tank car traffic, 30 tons per car; refrigerator cars, 13 tons per car; and stock cars, 11 tons per car.ƒ

The average number of loaded car miles per car per year was 4,300 miles; empty car miles per car per year 2,800.**

Characteristics of present railroad cars are shown in Analysis 84.1, and the average load carried by commodities and types of car appear in analyses 90.2 to 90.5, inclusive. In 1933, considering all cars, a ton of tare carried on the average 1.6 ton of lading. By types of cars there is a great variation. For box cars, one ton of tare carried 1/2 ton of payload; for refrigerator cars, 1 ton of tare carried 1/2 ton of payload; for stock cars, 1 ton of tare carried 3/5 ton of payload; for tank cars, 1 ton of tare carried 1 1/4 tons; while for open top cars 1 ton of tare carried 2 1/2 tons of payload.##

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* Analysis 84.1.

\# Eighteen million carloads at 6 loaded days per car plus 3 million merchandise carloads at 1.77 loaded days per car, total 124 1/2 million loaded car days, or 341 thousand cars under load per day. Analyses 67.1 and 84.1.

ø Analyses 45.17 and 67.1.

ƒ Analysis 90.2 et seq.

** Analysis 70.1.

## Analyses 84.1 and 90.2 et seq.

Considering movement of freight cars as well as load, the ratio of tare to payload is even more striking. Taking loaded haul only, for each net ton mile in 1932, the railroads produced a tare ton mile, while including empty haul they used 1 3/4 tare ton miles. If the locomotive and tender be included, the non-revenue ton miles amounted to 2 1/6 times the net ton miles.*

In reducing vehicle weights the present strength of cars must be retained until operating practice is changed. Unfortunately, long trains, yard and road switching, and inadequate couplers, draft gears, brakes and other parts with which many existing cars are equipped, require that new cars be able to stand the gaff in trains with present cars. Due to advances in the metallurgical art it is now practicable to use alloys and castings which combine increased strength with less weight and corrosion-resisting properties. The initial cost of cars constructed of such materials and using improved design will increase materially only when more than a 20 percent reduction in present car weight is sought. It is possible to construct a freight car equal in size and strength to present cars but weighing less than one half as much. Weight reduction for each type of car must be worked out on its merits. For example, in place of the present box car, consider a newly designed flat car 42 feet long to carry five containers each of 500 cu. ft. capacity and 12 1/2 tons load limit. Without the use of alloys, the flat car will weigh approximately 19 tons and the containers 9 tons, with a load limit of 62 1/2 tons, and average load of at least 45 tons. The ratio of maximum and average payload to tare is respectively 2 1/4 and 1 2/3 while for present box cars on the basis of 1933 carload traffic only, the ratios were 2 3/8 and 1 1/5. Using alloy materials, with only a moderate increase in cost the tare weight of car and containers can be reduced to 22 tons, producing ratios of 2 5/6 and 2, a gain of 75 percent in the average load compared to tare.# Incidentally, the weight-reducing materials used would result in a longer life with less maintenance expense.

Highway — The rated capacity of a truck is merely a rough classification of the chassis capacity, minus average body allowance, under average conditions of grade and speed. Any departure from these conditions will alter the carrying capacity. An allowable gross load rating is also generally provided for the chassis, based on the structural safety of its members and working parts. When average body weights are subtracted, there results a marginal allowance for overloading beyond the rated capacity which decreases relatively as the vehicle increases in size. The rated capacity plus this overload may be termed the manufacturer's allowable load. It is the difference between the

* Analysis 70.1. # Analyses 94.1 and 90.2 et seq.



chassis and body weight, fully equipped, and the allowable gross load. It represents, in the case of a truck or tractor, the load that can be carried with safety.

It does not, however, represent the load that may be pulled with safety. The truck-trailer or tractor-trailer combination involves additional carrying capacity provided by the frame members, wheels and brakes of the trailer, which permits far greater loads to be carried by combinations than by single motive units of like rated capacity.

The trailer or semitrailer cannot, however, increase the capacity of the motive unit for performing work, and it must follow that the 2 1/2 ton tractor hauling the 5 ton semitrailer or the 2 1/2 ton truck hauling the 2 1/2 ton trailer must lose in speed and climbing ability some of the advantage it gains in carrying capacity.

From manufacturer's specification listings and average weight data of the last seven years the following generalizations appear:

$$\text{Manufacturer's allowable gross load, lbs.} = 21.22\ (\text{Rated Capacity, lbs.})^{0.765}$$

$$\text{Average vehicle weight, lbs.} = 36.58\ (\text{Rated Capacity, lbs.})^{0.628}$$

The difference between manufacturer's allowable gross load and the average vehicle weight represents the net allowable working load under average conditions. Should excellent conditions be present, however, for the particular haul, or should the speed be reduced, this margin may be materially increased, and in practice, as evidenced by the questionnaire replies on average loadings, it is increased considerably; though the average load carried throughout the entire annual mileage fell considerably below the manufacturer's allowance as witnessed by the average gross weight, which represented but 78.3 percent of the gross weight allowance, or,

$$\text{Average gross weight, lbs.} = 16.62\ (\text{Rated Capacity, lbs.})^{0.765}$$

## 85. Versatility of Freight Equipment

Railway — Measured by results of the one-day test, the box car was the most versatile of railway cars. It handled 34 percent of the ton miles and a part of each of the 24 commodity groups.* Next in importance were

* Analysis 85.1.

the gondola and hopper cars, 40 percent; refrigerators, 14 percent; and tanks, 9 percent. The percentage of total carload car miles of the various classes of equipment were: Box 37 percent; refrigerator 25 percent; poultry and stock 5 percent; gondola and hopper 22 percent; tanks 8 percent; and flats 2 percent.*

A single type container can be built to carry efficiently all commodities except livestock, liquid bulk material, and articles of a size too large for carriage in a container. A large part of the latter class would be carried normally on flat cars, however, and so could be carried on container cars minus the containers. As to bulk liquids other than milk, they can be transported most economically and serviceably by rail in tank cars of far greater capacity than are now used, while packaged liquids load easily in containers. Milk is a commodity which, when carried in bulk, requires a special tank and unavoidable empty return haul. By mounting the tank on a standard container base, any container car and any highway chassis (truck or trailer) can be used to transport the milk, thereby confining the special equipment to a small part of the total transport equipment required, and attaining greater versatility in use of the railway and highway vehicles. What has been said concerning bulk milk applies also to other bulk liquids which move a portion of the journey in bulk lots smaller than railroad tank cars. Thus, for local distribution it is economical to move refined petroleum in relatively small tanks, which even though they never travel by rail should be mounted on standard container bases so that the highway vehicle could be used to haul other commodities. The remaining commodity is livestock, which it is not practicable to move in containers that would be used for other products. Here again, while empty return haul would be incurred on livestock conveyances, the expense would be held to a minimum by using livestock containers mounted on a standard base, which could be carried on any standard container car or highway vehicle chassis.

An analysis# of all commodity carloadings for the year 1933, showed that only two sizes of containers are necessary efficiently to move all commodities, both containers having a width and height of 8 feet, one being 10 feet 4 inches long and the other 24 feet long. The shorter body would be loaded transversely on a flat car and so would require one third of the space of the longer body. On a 42 foot car, five small containers or one large container with two small ones could be loaded. On a 50-foot car, six small containers, two large containers, or one large and three small containers could be loaded. Livestock bodies could be mounted on the 24-foot container base, which could also be used for an ordinary freight body (24 feet long) which would carry light, bulky

* Analysis 89.1. # Analysis 90.2 et seq.



freight as well as material too long or large for the small container. On the small container base could be mounted standard freight bodies, some of which would need to be insulated and equipped for heating and refrigerating. Tank bodies for milk and other bulk liquids would preferably be mounted on the small container base, as the total load carried via highway using a tank mounted on the long container base would exceed the allowable gross weight of many states.

With the arrangement just outlined great versatility in equipment and its use would be obtained. Approximately 85 percent of all tonnage suitable for carriage in containers could be loaded in the small containers, while the special body containers would be held to a minimum.* All container cars, which are essentially flat cars, would move any kind of commodity, as would all highway tractors. Two lengths of highway semitrailers, would normally be used, for use respectively with the two sizes of containers, though where more economical both sizes of containers could be carried on a semitrailer designed for the 24 foot container. The rolling stock, both railway and highway, would have maximum utilization, the number of railroad cars would be materially reduced, while great versatility in the kinds of commodities carried per car would result.

Refrigeration of transport vehicles is now accomplished by the use of water ice, salt ice, solid carbon dioxide (dry ice), combination of solid carbon dioxide with brine or other materials, silica gel, anhydrous ammonia, propane and other gases. The first three substances cool by evaporation, the refrigerating materials being dissipated, while the remaining substances operate in closed systems without loss of the refrigerant but with a transfer of heat through alternate compression and expansion of chemicals. The heat transfer is accomplished by the aid of mechanical and electrical equipment or through chemical reactions.

None of these refrigerants can be considered as ideal in their application to transportation vehicles. Water ice is still the principal refrigerant used in railroad service, the other materials and methods having been developed in an attempt to eliminate the defects of water ice, some of which are as follows: Excessive weight and volume of space occupied; rapid dissipation with frequent renewals and accompanying large investment in icing stations and services; difficulty in rapid pre-cooling of vehicle bodies and lack of uniformity in temperature in different parts of the body; damage to vehicle body and lading with high maintenance expense; difficulty in obtaining low temperatures. The principal advantage of water ice is low first cost but a true comparison with other refrigerants can only be made by considering all elements of cost.

* Analysis 90.2 et seq.

The closed system refrigerants which eliminate the expense of constant replacement of refrigerating material, nevertheless, require considerable equipment which adds dead weight and necessitates servicing and maintenance in order to operate properly. Of the closed system refrigerants, one which has no moving parts is to be preferred, particularly if the dead weight to be transported and space occupied by refrigerating mechanism inside the vehicle body is small. Inasmuch as the vehicle body must be demountable, for movement by rail, highway, or water, the closed system refrigerating mechanisms have a difficult situation to meet.

This leads to the consideration of refrigerants which must be replenished but which overcome many of the defects of water ice. Of the refrigerants now available for use in containers, dry ice appears to be the most suitable. It maintains a more even temperature over a longer period of time, occupying less space with less weight, and without damage to the vehicle body. With dry ice much lower temperatures can be maintained, bodies can be rapidly pre-cooled, and it appears to have a beneficial effect on some perishable products with a deleterious effect on none. These advantages all result in lower refrigerating costs due to increased amount of lading per container unit with greater payload per ton of tare, reduced maintenance expense of vehicles and bodies, less servicing of shipments during transportation movement, and improved condition of perishables shipped. The principal drawback to the use of dry ice is its relatively high first cost and the difficulty at present of obtaining it at many points throughout the United States. Improvements in methods of production of dry ice indicate that both of these disadvantages may be overcome in the near future.

### 86. Adaptness of Freight Vehicles

Railway — Analysis 40.1 tells the shipper's story of what tonnage is being forced to the highway because of railroad high carload minimums. The railroad classification committees are under constant pressure from shippers and industry in general to reduce the carload minimum on a great number of commodities. At the beginning of the twentieth century the average capacity of box cars was less than 25 tons and of all cars 28 tons. As late as 1920, over 80 per-cent of all box cars had capacities of 40 tons or less, the average being 37 tons. Today the average load-carrying capacity (not nominal or marked capacity) of all box cars is 50 tons, while for all cars it is 55 tons. The railroads are committed to large cars of great capacity, but the customer must ship in smaller than carload quantities. Trucks are meeting the need within the limits of distance that truck load shipments can be made economically. A solution to the problem lies in the use of containers, whereby the present large car chassis can be



retained with economy and the shippers' needs met by loading three, four, five, or six containers to a car. Reference to the cubical space required for the average loads now moving by highway* indicates that containers will handle satisfactorily the present shipment. The small container, 10 feet 4 inches long, previously described, of 500 cu.ft. and 12 1/2 ton capacity, is seen to be satisfactory for all commodities except livestock, lumber, baled cotton, automobiles, department store merchandise and tobacco products. All of these commodities are well suited to the 24 foot container of 1,200 cu.ft. capacity, although some of them might be shipped just as well in two 500 cu.ft. containers. In most instances shippers using containers could move a somewhat larger average load than now moves by truck with but a small increase in the total transportation charge and an actual decrease in the charge per ton.

### 87. Dependability of Freight Vehicles

### 88. Accessibility of Freight Vehicles

Shipper — The shippers' cost of loading and unloading freight is shown in analysis 32.1. For all freight originated and terminated at team tracks, as well as all freight which receives unnecessary handling, this expense would be eliminated by the use of containers.

Railway — The cost of initial loading and final unloading can be materially reduced by providing a container which permits mechanical handling of materials. Wide doors on at least two of the four sides, roof hatches or a roof easily removable in one piece, discharge gates for spreading or chuting bulk material at point of delivery, all are necessary. For example, the 500 cu.ft. container should have doors at least six feet wide and high on two opposite sides; a horizontal hinged gate eight feet wide and two feet or more high at each end with a small door in the middle of the gate to permit chuting of materials, and probably additional large doors above the hinged end gates; and an easily opened water-tight hatch at least two feet square in the roof. The 24-foot container should have a door at least six feet wide and high on each side and end, two or more roof hatches, and the whole roof should be readily removable in one piece. The inside walls of all containers should be smooth, plane surfaces, and the floor should be a single, unbroken plane. Given such containers to load or unload, shippers can effectively use various sorts of material handling equipment to perform the work quickly and at low cost.

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* Analysis 38.1.

### 89. Mobility of Freight Vehicles

Shipper — The additional expense incurred by off-track shippers due to drayage of freight is shown in analysis 24.8. Likewise, the saving in drayage charges which is possible through the use of motorized terminal container service compared with present terminal truck service is shown in analysis 25.1.

Railway — The average freight carload averaged 63 miles per loaded car day over all, 119 miles while in the carrier's possession and 395 miles while in road trains. The most mobile classes of freight equipment were poultry and stock cars which averaged 193 loaded car miles per car day over all, 257 car miles while in carrier's possession and 487 miles in road trains. A close second was the refrigerator car which averaged 166 miles per loaded car day over all, 247 miles while in carrier's possession and 493 miles in road trains. The most sluggish cars were hoppers, 30 miles per day over all, 65 miles in carrier's possession and 291 miles in road trains. Box cars (c.l.) averaged 66 miles over all, 115 miles per loaded car day in carrier's possession and 390 miles in road trains. L.c.l. box cars were some faster, 105 miles over all 133 miles in carrier's possession and 441 miles while in road trains.

The average carload required 34 hours to load or unload; the average l.c.l. car loaded in 6 hours and unloaded in 3 hours. Of the carload cars, poultry and stock were loaded or unloaded in an average of 6 hours; refrigerators were loaded in an average of 15 1/2 hours and unloaded in an average of 28 hours; gondolas required 45 hours to load and 34 hours to unload; hoppers, 48 hours to load and 43 hours to unload; tanks, 29 hours to load and 60 hours to unload; flat cars, 24 hours to load and 29 hours to unload. The average haul of all carload cars was 376 miles; of l.c.l. cars, 199 miles. The longest average carload haul was found in refrigerators, 1,169 miles. The next were box cars, 426 miles. The shortest carload haul was in flat cars - 179 miles.*

### 90. Utility of Freight Vehicles

Highway — Load factor data were tested by an application of the percentage difference between the vehicle weights and the reported average gross weights. The curve takes the downward trend because it is in terms of rated capacity which approaches the manufacturer's allowance as the vehicle increases in size. In terms of the manufacturer's allowance, however, it continues upward.

* Analysis 89.1.



Annual mileage varied between for-hire and private operators, the small delivery group of the latter considerably exceeding the average and the very largest group taking on the characteristics of the former. The curves were fitted according to the general method outlined. Weighted average coefficients were employed.

$$\text{Annual mileage, for-hire} = 546\ (\text{gross weight, lbs.})^{0.4}$$

$$\text{Annual mileage, private} = 386\ (\text{gross weight, lbs.})^{0.4}$$

### 91. Capacity of Freight Vehicles

Railway — The total serviceable cars owned by carriers in 1932 were 2 1/6 million, in addition to which there were approximately 250 thousand privately owned cars. The average time a car was under load, developed in a nationwide test on December 13, 1933, was 6 days, of which during a little more than 3 days it was in the carrier's possession and just under 3 days in the possession of the shipper or consignee. The ratio of empty to loaded car miles was about two thirds.* Hence the time required for the empty return would be about 2 days, and the time for the round trip of the car, 8 days. On the basis of 320 serviceable days, this would mean approximately 40 round trips per year per car, or a capacity of about 95 million cars having the characteristics of the 1932 average movement.# This is over three times the 1932 traffic and about 80 percent greater than the peak traffic of 1929.ø

The relative utilization, both weight and volume, of freight cars and containers, for each of the Commission's commodity groups, is shown in analyses 90.2 et seq. Both weight and volume capacity of cars, with respect to 156 commodity groups, were considered. All box cars loaded to 50 percent of both weight and volume capacity. Automobile box cars loaded to 82 percent of volume capacity and 11 percent of weight capacity. Refrigerator cars loaded to 51 percent of volume capacity and 35 percent of weight capacity, while open top cars loaded to 88 percent of volume capacity and 79 percent of weight capacity. All cars loaded to 57 percent of volume capacity and 63 percent of weight capacity. Taking only the best loading, either weight or volume, it was found that all box cars averaged 70 percent of capacity, refrigerator 54 percent, stock 96 percent, and open top 95 percent. The present average tenders of commodities could be loaded

* Analysis 89.1.
\# Analysis 67.1.
ø Analysis 3.1.

into containers of the two sizes described with a utilization approaching 100 percent of the capacity, volume or weight, whichever was the limiting factor. The substitution of containers for present car bodies would materially increase the average load carried.

## 92. Modernization

Railways

One of the heaviest expenditures which railway must make is maintenance of their cars. This cost in 1932 was 17 percent of their total operative costs. It amounted to $64 per train operated, 12 1/2 dollars per car originated, 52 cents per ton originated, 87 cents per train mile, and 33 mills per loaded car mile.* In 1932 the maintenance cost amounted to about $160 per car owned, about 60 percent of the 12-year average.# Of the total cost in 1932, 52 percent was expended for repairs and 48 percent represented depreciation and retirement charges.ø

Listed in the Official Railway Equipment Register, July, 1934, are more than 21,000 flat cars of 80,000 pound nominal capacity and more than 25,000 flat cars of 100,000 pound nominal capacity which are over 36'-0" long and less than 42'0" long. These 46,000 flat cars are suitable for carrying four 500 cu. ft. containers each. In addition there are some 2,700 flat cars of 80,000 pound nominal capacity and 10,000 flat cars of 100,000 pound nominal capacity over 42'-0" and less than 50'-0" long. These 12,700 flat cars would carry five 500 cu. ft. containers each. There are also more than 5,000 flat cars of 100,000 pound nominal capacity over 50'-0" long, each of which would carry six 500 cu. ft. containers. The total supply of flat cars suitable for use in container service thus exceeds 63,000. There are more than 77,000 flat cars owned by U. S. railroads.

Similarly there are about 21,000 mill gondola cars of 100,000 pound nominal capacity over 36'-0" long and less than 42'-0" long which would carry four 500 cu. ft. containers each. There are also over 24,000 mill gondolas of 100,000 pound nominal capacity and over 13,700 mill gondolas of 110,000 pound nominal capacity over 42'-0" long and less than 50'-0" long. These 37,700 cars would each carry five 500 cu. ft. containers. Thus there are over 58,000 mill gondolas which are suitable for container service, practically all of which are no longer suitable for the purpose for which they were built. The total number of mill gondolas exceeds 93,000.

* Analysis 77.2. # Analyses 3.4 and 89.1.
ø Commission statistics, 1932: Car repairs, 120 million dollars; car depreciation and retirements, 112 million dollars.



The total supply of flat and mill gondola cars suitable for container service is at least 111,000. From 70,000 to 80,000 of these cars should be readily available for container service and could be reconditioned and put in first-class shape, including new deck, guide channels and stops for containers, selective draft gear, non-harmonic springs of coil-elliptic or other spring-dampening arrangement, at an estimated cost of $350 per car, or with "AB" brakes included the average cost would be $495 per car.

If additional cars are required for container service they could be drawn from the existing surplus stock of box cars, preferably of 100,000 pound nominal capacity, 40'-6" inside length type. Such a car with the superstructure removed does not have sufficient structural strength to safely carry five containers each weighing 28,500 pounds (including 25,000 pounds payload). While the car underframe could be strengthened by increasing the structural material in the side and end sills, it would be preferable to discard the present underframe and replace it with a modern cast-steel underframe designed for container service. With new underframe plus modern draft gear and spring dampeners, and "AB" brakes, but using present trucks, a car for container service should cost approximately $1,300 for the chassis and about $1,500 for each set of five containers. Such a chassis would be the equivalent of a new car of the most modern construction especially designed for container service which would cost approximately $1,600. Should the present box car underframe be retained, but remodeled to suit container loadings, with new deck, guide channels, container stops, modern draft gear, spring dampeners, and "AB" brakes, the estimated cost per car would be about $1,050 and the reconditioned car would not be the equivalent of a car with new underframe.

Waterway

Maintenance of vessels by all reporting carriers involved an expenditure in 1932 of $18,000,000 which was 14 percent of total freight expenditures and 81 percent of total maintenance expenses. Common carriers spent $14,500,000 or 13 percent of total expenditures and 78 percent of maintenance expenses for vessel maintenance, while these figures for contract carriers were $2,000,000 or 15 percent and 96 percent, and for private carriers $1,500,000 or 19 percent and 97 percent.*

In the Atlantic Coast district, maintenance of vessels by common carriers amounted to $3,311,000 or 14 percent of total freight expenditures and 74 percent of maintenance expenses, and for other carriers the sum expended and similar percentages were $871,000 or 20 percent and 92 percent.*

* Analysis 77.3.

In the Atlantic Gulf service, the figures for common carriers were $2,918,000 or 19 percent and 70 percent and for other carriers $224,000 or 22 percent and 100 percent.*

In the Intercoastal trade, common carriers spent for vessel maintenance $4,143,000 or 10 percent of total expenditures and 83 percent of maintenance expenses and other carriers in this trade spent $51,000 or 16 percent and 58 percent of total and maintenance expenses, respectively, for this purpose.*

On the Inland Waterways, similar figures for common carriers were $1,598,000 or 20 percent and 77 percent, and for other carriers $69,000 or 15 percent and 99 percent.*

On the Great Lakes, common carriers spent for vessel maintenance, in 1932, $1,210,000 or 15 percent of total freight expenses and 88 percent of total maintenance expenditures and other carriers on the Great Lakes spent for this purpose $2,240,000 or 15 percent and 99 percent respectively of total freight and maintenance expenditures.*

On the Pacific Coast, similar figures were for common carriers $1,326,000 or 11 percent and 88 percent, and for other carriers $59,000 or 8 percent and 99 percent.*

Highway

Maintenance costs represent the cost of repairing and maintaining the vehicles. Other maintenance costs are charged to garage rent or general overhead. The curve was fitted by the adopted method and the coefficient used is the weighted average.

Maintenance costs, cents per mile =

$$0.016362 \text{ (gross weight, lbs.)}^{0.53}$$

No trend was indicated for maintenance labor as between vehicles of different sizes in terms of cents per mile. The weighted average cost for all vehicles was 1.1567 cents per mile. It was applied and the differential between it and maintenance costs was taken as maintenance materials.

Garage miscellaneous includes those transportation expenses connected with the servicing of the vehicles but not directly allocable to any particular account. Washing, greasing, tire-inflation, radiator filling, etc., are representative. A mean coefficient resulting from the 6 group averages was used.

Garage miscellaneous, dollars per year =

$$2.89 \text{ (gross weight, lbs.)}^{0.4}$$

* Analysis 77.3.



This results in an exact equivalent of 0.7225 cents per mile for all vehicles. The labor element in this expense showed no trend but a weighted average for the gross expenditure in the sample indicated that 68.50 percent of this miscellaneous expense represented labor. These figures were used.

Vehicle depreciation was almost invariably charged by the operators responding, and in a considerably higher amount than is theoretically necessary. It is generally, though not always, charged on a mileage basis. The society of Automotive Engineers considers it a fixed expense. If mileage were consistently uniform as between different vehicles and between different operations, and if maintenance practices were similar, a recommended method of depreciation on a time basis or a mileage basis might be advisable. Lacking such uniformity, however, the method by which depreciation reserves on vehicles are set up must remain a choice for the individual operator. This investigation regards depreciation as a mileage charge. The mean coefficient was used.

Vehicle depreciation, cents per mile =

$$0.022334 \text{ (gross weight, lbs.)}^{0.5}$$

The increase is therefore according to the square root of the load. Dividing it into vehicle price results in mileage life, which divided by annual mileage gives the life in terms of years. The resulting figures are wholly normal.

The excess charge by the operator is indicated by the fact that the average life of all trucks registered is approximately 9 years.

## XXV CONDUCTING TRANSPORTATION

### 93. Conduct of Freight Transportation

Railway

The general group of primary expense accounts now called "transportation expense" were formerly called "conducting transportation" - a title which more nearly describes their nature. These accounts cover the expense involved in field operations as distinct from maintenance upon the one hand, and overhead expense upon the other. In 1932 they aggregated 809 million dollars, which was 31 percent of revenues and 41 percent of costs.* They may be classified further in the expense of operating stations "agency expense", of operating yard trains, including supplies, of water transfer, and of road train movements, including supplies.

### 94. Operation of Freight Stations

Station

Expense of operating stations in the United States in 1932 amounted to 155 million dollars, or 6.1 percent of the revenues and 7.9 percent of total costs. Expressed as a unit cost, it amounted to $5.72 per car originated and $5.68 per terminal car. The cost is one largely chargeable to l.c.l. traffic.*

Because of difference in kinds and sizes of terminal and station facilities, their location with reference one to the other, the class and volume of business handled and the time and manner of arrival and departure of traffic, each terminal or station is a separate and distinct problem, and changing within itself with the ebb and flow of traffic. Standardization of operation is therefore impractical and this report deals in a general way only with what, from the responses made by the many railroads, are, in the judgment of the writer, progressive station methods of recent origin and susceptible of extensive application or those suggested that may be advanced steps.#

Billing. Speed, accuracy and efficiency of station operation would be promoted by uniformity of arrangement of written matter on bill of lading, waybill, freight (expense) bill, and prepay bill and the completed transportation service advanced by the elimination of duplication in the preparation of these documents as far as such action is practicable.

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* Analysis 93.2.

\# This and succeeding paragraphs about Railway Station Service constitute the report of Mr. F. J. Ginn.



Railroad transportation is based on a contract between shipper and carrier called a bill of lading, the terms and general form of which are prescribed by the Interstate Commerce Commission, the contract, in triplicate, usually being prepared by the shipper. Actual transportation is conducted on a form known as Freight Waybill, the makeup of which is authorized by the Railway Accounting Officers Association, and made mandatory in interline service, the issue now in use being the outcome of years of experience in meeting needs incident to movement from point of origin to destination, collection of charges and accounting.

The matter written or typed by the shipper on the bill of lading is copied in full to the carrier's freight waybill. It would, therefore, seem desirable that the forms be as nearly identical as practicable so the transcribing which is usually done hurriedly and frequently under the most unfavorable circumstances might be accomplished with a maximum of speed and minimum of opportunity for omission or error. As the form of the waybill is dictated by transportation requirements and there is no urgent demand for maintenance of the exact makeup of the present uniform bill of lading, the bill of lading, memorandum copy, and shipping order might properly be aligned with the Mandatory Freight Waybill in present or revised form, any change to be effective with individual shippers only as their stock of forms is exhausted.

With trucks going into plants at all hours of the day and night in competition for both carload and less than carload traffic, it is a matter of prime importance that the service of the railroads be made as convenient to users as that of their truck competitors and that the lowest consistent time in transit be afforded. The location of the shipper's place of business with reference to carrier's station and yard frequently compels the public to maintain messenger service or resort to other inconvenient or expensive methods of handling the bill of lading to the railroad as compared with the trucking company picking it up at his place of business, railroad transportation usually beginning only after the waybill reaches the forwarding yard.

This situation has been met in the packing and a limited number of other industries with a combined bill of lading and waybill made at one writing, which practice would seem possible of general use if the uniform bill of lading and mandatory freight waybill were aligned to register properly. A combined bill of lading-waybill form carrying parts to be sent to the yard with the car, on which transportation and delivery might be accomplished while the bill of lading was moving to the station, and billing and accounting incident to its forwarding were being done would aid, and designated convenient points such as city offices, yards, etc., at which the public

could deliver the bill of lading would add to satisfaction. In major areas the making of such offices joint and the distribution of the bills of lading to the respective roads by joint messenger service would seem proper.

The written matter on the freight waybill must be transcribed in full to the freight (expense) bill. Speed, accuracy and the prevention of omissions in this work would seem to warrant reconciling these forms and making both at one writing, in mandatory form. This practice, known as manibilling, is now in use in varying form on a number of roads in the handling of local business and has, in experimental use, been found to be practical on interline traffic, copies of some of the forms being attached to individual reports of carriers.

The collection of prepaid charges from credit patrons is usually on a copy of the waybill. These prepaid bill forms should be lined up to register with the mandatory freight waybill and be made at the same writing, the practice now being in effect on a number of roads.

Freight waybilling of traffic is usually done at point of origin, but with adoption of zone rating and accounting it has in many instances been found efficient and economical to transfer this work to Zone Bureaus, to Operating organizations in close proximity thereto, or to separate ones centrally located.

Conclusions. That straight bill of lading, freight (expense) bill and prepay bill be revised to register with Railway Accounting Officers mandatory freight waybill and the forms prepared by shipper and carrier in such combinations as will afford the best transportation service.

Rating. The application of rates and extension of revenues by the forwarding agent and their verification by the terminating agent constitute a duplication of effort that tends to delay the movement and delivery of traffic, and audit office revision, at a later date and after payment, results in undercharges and overcharges which annoy the public and increase the expense to the carrier.

After the bill of lading is signed for a carload or less than carload shipment the usual procedure at originating station is to send the shipping order to the rate clerk, to the computer, to the waybill clerk, and to the reviser. At destination the waybill goes to the rate clerk, to the computer, to the freight (expense) bill clerk, and to the reviser and in the General Office at a later date a revising clerk and a computer again check the billing. This procedure slows down the process. is expensive, and has a tendency to



entrust the accuracy of the transaction to the next fellow. In the early days of railroad transportation, the terminating road-haul carrier and its destination Agent were held responsible for the correctness of the rate used and charges collected and the passing through to destination of errors of commission and omission was common, station accounts being flooded with disputed and uncollectible bills.

The adage, "A task well begun is half done", applies nowhere with greater truth than in the transportation field and recently efforts are being made at point of origin where tariffs are legally required to be filed, to insure that the shipment begins its journey properly routed, rated, revenued and waybilled so a splendid transportation movement may not be ruined by an undercharge or overcharge bill.

Rate work under this most progressive method is handled as follows: Bureaus, branches of the General Accounting Department are established at large or pivotal stations with adequate and efficient force and supervision, complete tariff file covering traffic moving from, to or through the station, calculating machine, charts, etc. When bills of lading are signed, the shipping orders are sent direct to these Bureaus where they are rated, and extended and passed to station forces for waybilling. The waybill and shipping order are turned back to the Bureau, checked for correctness and Accounting Department authority stamped on the waybill, after which it is subject to no further revision excepting test checking in the General Office. Inbound waybills not bearing audit stamp are turned over to the Bureau and revised as to rates and extensions before freight waybills are made. Waybills covering l.c.l. merchandise in cars in the warehouse for transfer not audit stamped are sent to the Bureau for revision, are audit stamped and require no further attention. Under this arrangement a percentage of audit authority before presentation as great as 85 percent is attained on one railroad.

Outlying stations are assigned to the Bureau most advantageously located based on train schedules, etc., to Bureaus, and copies of forwarded and received waybills dispatched to the Bureaus by first train after the close of the days business. Waybills not bearing audit stamp are revised promptly and changes immediately given to the Agent effected by telephone, wire or mail, balance due or refund notices following by mail. This procedure in most cases enables Agents to correct prepaid freight bill or destination freight (expense) bill before charges are paid.

Special forms are used to secure additional data necessary in connection with descriptions, weights, etc., and to notify agents responsible for errors, primarily for the purpose of preventing recurrence.

Under this plan of operation, by which only audited bills are placed in the hands of the public, balance due and refund bills are practically eliminated, one carrier reporting 99.96 percent accuracy and another adjustment after settlement averaging 1 for each 2,000 bills handled. On the latter line three large patrons whose freight payments in 1934 aggregated $1,611,777 advise that reaudit by outside rate audit bureaus develops but a single item of $4.00, the correctness of which has not yet been developed.

Because of the close relationship of rating and billing and the passing and repassing between Operating and Accounting Departments at Bureau stations it would seem both efficient and economical to transfer waybilling and freight (expense) billing at those points to the Accounting Department.

Conclusions. (a) That Rate and Revision Bureaus operated by the Accounting Department be established at principal and pivotal freight stations, transfers, and yards; on originating traffic applying rates and extending revenues; on received traffic revising rates and revenues in advance of freight (expense) billing; and on passing traffic revising rates and revenue while cars are at station.

(b) That the making of waybills and freight (expense) bills at such points be taken over by the Accounting Department to avoid loss of time and confusion incident to passing and repassing between departments.

Accounting. Station accounting work creates a substantial part of station expense and is in part duplication of data maintained in some form in the General Offices of the Company and is the work in the station that is first subject to delay when station forces are disrupted due to illness, vacation, promotion, demotion, or other causes.

Station accounting, formerly a considerable part of station work, included the writing of book records of freight received and forwarded, making monthly reports thereof, writing record of cash collections, posting collections against received and forwarded books, following up items standing open on the abstracts, making monthly balance sheets and list of uncollected, this procedure being changed slightly some years ago by the inauguration of a system under which the book records and monthly reports of freight received and forwarded were replaced with daily abstracts. Regardless of the mass of data prepared in the station, there was considerable duplication of work and data in the General Office.

With the advent of machine accounting, it was found practical to transfer much of this work from the station to the General Office and with the introduction of the 80 place



machine card in 1930 to transfer the remainder, eliminating duplication between stations and General Office, and in instances performing station and General Office accounting at one operation.

Under the changed methods on a number of carriers, stations make bills for transportation, collect them and remit the money, all other features of station accounting being taken care of by the General Office. Corrections are cut out, correspondence reduced to a minimum, safer accounting conditions produced and the time of the Agent made available for solicitation and other valuable station functions.

Conclusions. That station accounting work other than the making and collecting of bills and remitting of funds be taken over by the Accounting Department, and the making of abstracts, register of uncollected, cash sheets, miscellaneous collection, switching, earnings, the policing of collections, the disposition of disputed items not collectible at the station, and the preparation of statement of uncollected bills and monthly balance sheet be transferred to Central or General Offices.

Master stations. The maintenance of sub and suburban stations in cities and at short distances in rural districts with a full complement of tariffs and clerical forces is not required by the public or justified by present day conditions.

When transportation of people and of property was slow and expensive and communication restricted, proper service to the public required the establishment of stations only a few miles apart. With the advent of hard roads and motor vehicles and the general use of the telephone, reasonable distances are no longer obstacles. Adding to these store door pick-up and delivery and the use of highways for station-to-station business now being inaugurated and extended by the railroads, the demand for station service at many of these points has fallen off or ceased to exist and their status might be changed to receiving and delivering platforms or abolished entirely.

Conclusions. That central or master stations be designated for the purpose of maintaining complete tariff files concentrating the assembling, running, unloading and distributing of l.c.l. merchandise freight and handling the rating, billing, expensing, collecting, and other office work, thereby reducing tariff expense, eliminating package car runs, increasing average carloading and promoting efficiency and economy both in office and warehouse operation.

Collections. The collection of railway transportation charges in strict conformity with regulations is an obligation imposed on carriers. Differences in interpretation of instructions on the part of employees of carriers, the attitude of

patrons, and liberal practices of competing forms of transportation make uniform compliance of individual carriers and of stations difficult, if not impracticable.

The collection of transportation charges is among the important as well as the difficult duties of an Agent, the situation being complicated by lack of prompt and accurate knowledge of placement of switched cars, differences in the rules and regulation of the carriers and in the interpretation thereof, the tendency of some patrons to obtain undue advantage by playing one carrier against another and the desire of Agents to aid patrons of known responsibility.

In an effort to control the situation in populous areas joint collection agencies have been formed by the railroads at a number of points under what is known as the "Kansas City Plan", the joint agency collecting all transportation charges, lifting shippers' order bills of lading, advise orders, grain elevator weight certificates, and handling and apportioning among interested carriers, as needed, bonds filed as guarantee against delayed and lost bills of lading.

At less important points, Treasurers of carriers interested have sponsored organization of Agents' Associations under what is known as the "Detroit Plan" to police collections.

Conclusions. (a) That in metropolitan areas joint agencies be created to handle for all railways under uniform rules on what is known as the "Kansas City Plan", the collection of transportation charges, the lifting of "Order Notify" bills of lading, of "Advise" orders, of weight certificates on cars on which outturn weights govern, and the distribution between carriers as needed of bonds filed by patrons as guarantee against delayed and lost bills of lading.

(b) In smaller cities and towns served by two or more carriers, local agents be organized to supervise the same elements of station service under what is known as the "Detroit Plan".

(c) In joint agencies other than regularly established Collection Bureaus the rules of the railroad operating the station govern the collection of transportation charges on all lines party to the joint agency.

Joint Station Funds. Lack of proper facilities, difficulty in or impossibility of keeping change and the practice of patrons in making a single check covering bills of two or more of the parties to joint station make difficult if not impossible the handling separately of the funds of any one company.



At stations joint between carriers or with Pullman, Western Union, Railway Express Agency, and others, the handling of funds is complicated by lack of facilities for keeping monies separate, by patrons including in a single check amounts due more than one Company, and by difficulty in obtaining change, necessitating transfer of cash from one account to another, resulting in discrepancies in the cash of individual railroads.

On some carriers all receipts, excepting Other Carrier and Railway Express Agency, are remitted daily to the Treasury of the Railway operating the station, remittances of those tenants being made as required by their rules through station draft of the joint Agent on the Treasury of the operating railway, Other Carrier and Railway Express Agency funds being handled in the usual way.

In the operation of joint Collection Bureaus, shippers and receivers are authorized to make a single check in favor of the Manager covering a day's business of all carriers. The adoption of such a rule at joint stations would add greatly to public convenience and if the funds of other carriers and Railway Express Agency were remitted to the operating railroad with those above referred to and distributed by station draft, greatly improved operation would result.

Conclusions. That all of the funds of a joint station be kept together and remitted to the Treasurer of the operating railway, under its rules and regulations, and a tenant lines collections remitted to it, as required in its rules, by station draft of the joint Agent, patrons being allowed to make a single check, payable to the joint Agent, for a day's business of all Companies party to the agency.

In event train service, location, or other cause makes the Treasury of a tenant line more acceptable as the joint depository, it should be used.

Warehouse Facilities. The extent of existing station facilities and their location with reference to business districts is not justified by present day business requirements, the volume of l.c.l. merchandise moving, the expansion of collection and delivery service and the use of highways for merchandise movement.

On account of the slow and expensive movement of animal drawn vehicles in earlier days, and for that reason to minimize drayage distance, freight stations were, as a general thing, located as near the business section of cities as possible, with yards in close proximity. Development of surrounding property with increased real estate values prevented expansion, and restrictions in movements of trains and vehicles

over busy streets forced the removal of yards to outlying locations, greatly increasing the distance between yard and station and the time required to serve the house. Old industries desiring to enlarge and new enterprises seeking sites were faced with this condition, leading them to locate in suburban territory.

Continuing growth of business in many instances made necessary the building of separate inbound, outbound, transfer and suburban freight stations but relocation of industries coupled with the recession in general business during the past few years and the further loss due to truck competition, present locations are in many instances unsatisfactory and the extent of the facilities in excess of present or probable future needs.

Conclusions. That existing inbound, outbound and transfer stations be consolidated, and where practical new stations with necessary team tracks be located adjacent to main receiving and forwarding yards on hard surface roads with good approaches thereto.

Four-Wheel Trailers The time value to the public of motor equipment generally used in handling l.c.l. merchandise is greater than horse-drawn vehicles and there is, therefore, an increasing responsibility on the part of the railroad to release it promptly.

Freight station operation is greatly improved and ability to handle morning and evening peaks of traffic benefited by the receipt and delivery of l.c.l. merchandise on four-wheel trailers and where volume and distance warrant and arrangement of facilities permit, handling the trailers with electric or gas tractors. Live and dead skids, removable bodies and truck racks are useful under some conditions.

Spotting inbound loads with due regard to the freight in cars, leaving undisturbed, if properly stowed, transfer freight en route to distribution point; cars made empty used for reloading; cars loaded as near as practical in train run order; close observation of unnecessary merchandise cars by consolidation of package car runs are desirable.

At points where two or more stations are maintained, and the volume of business warrants, trailers "ferried" between stations in cars or special arrangement to eliminate rehandling and to avoid running duplicate inbound and outbound package car schedules have been found efficient and economical.

Conclusions. That four-wheel trailers be used in acceptance from and delivery to the public of l.c.l. merchandise freight and in "ferrying" shipments so loaded between main,



sub and transfer stations, electric or gas tractors being used to handle them where volume and operating conditions warrant.

Opening-Closing Time. Carriers are not obtaining full benefit of the high speed train service being accorded l.c.l. merchandise due in part to commercial practices and in part to failures of their own.

Under normal practices the public accept inbound shipments from carriers in the forenoon, using the articles to complete consignments, and deliver outbound traffic to carriers in the afternoon, usually at the latest moment possible. Studies which have been made from time to time show that a considerable percentage of l.c.l. merchandise traffic handled in high speed trains at heavy expense is delayed in delivery to consignee due in part to carrier failure to unload early and in part to commercial practices.

In an effort to improve this condition and to meet truck competition some carriers are bringing on forces as early as midnight keeping open until 10:00 P.M., but even this will not solve the difficulty without C&D contractors and public drayage companies doing their full duty in making deliveries and consignees giving better service when their own vehicles are used.

Conclusions. (a) That carriers place arriving merchandise as early as practicable, starting necessary unloading gangs and inward office force at such hours as will complete unloading of available cars and have shipments ready for delivery at the established hour of opening for business.

(b) Studies be made at important stations from time to time to determine deliveries made on day of unloading by the several classes of delivery service, C&D and contract drayage percentages to be based on actual deliveries to patrons.

(c) Receivers be urged to accord traffic arriving by rail equality of treatment with that handled by highway traffic.

Three-Man Gangs. Rigid warehouse gang formation is not practicable, the large unit not being uniformly efficient. Warehouse operation is conducted under "gang" formation, the number of men constituting a unit fluctuating with the size of the house and the volume and kind of traffic handled, a clerk, a loader, two truckers and a stevedore, a total of five, being generally considered a gang. Observation of the operation of such units shows there is slack in each division due to the difference in length of haul, congestion, varying speeds of the different men in the gang, etc. Experiments made with gangs of fewer men and with changed

working methods under which the clerk when waiting loads trucks and the truckers stow freight have generally produced increased man hour efficiency and lower costs.

Conclusions. That in the handling of freight with two-wheel trucks, the so called "drop truck" system be used and a clerk and two truckers, a total of three men, be deemed the gang unit, with the clerk loading trucks and the truckers trucking and stowing freight, this formation to be deviated from only in specific cases when made necessary by the character of freight handled or other conditions in the judgment of the Foreman warranting.

Study Improved Methods. With highway vehicles backing up to shipper's door and in many instances accepting and delivering shipments at a number of points within the plant, it is essential that the greatest possible ease and convenience be afforded the public in their interchange of business with carriers at freight stations.

Design of office and warehouse facilities, methods of operation and the equipment used have a marked bearing on the satisfaction of the public with the service afforded by the railroads. Warehouse door levels should correspond with the height of the major number of vehicles, an adequate and competent force be maintained, doors should be kept open the full established period, special arrangements made for delayed vehicles and emergency shipments, assistance given in the handling of heavy or unwieldy articles and as far as practical outbound l.c.l. merchandise shipments be accepted from and inbound shipments delivered to the public on four-wheel trailers or other mobile devices, saving time and rehandling. Cashiers' offices should be located in close proximity to the warehouse.

Conclusions. That constant study be made by individual carriers to improve station facilities and methods, keeping them in line with or in advance of those of competing forms of transportation, reporting to American Association of Railroads for the benefit of carriers generally new ideas and practices found efficient and economical.

Universal Stations. The use of freight stations for the individual business of a carrier in cities of importance is not justified by present day conditions.

The popularity of rail transportation is adversely affected by the general rule of individual railroad freight stations, compelling the public to peddle to as many stations as there are shipments for different roads. By merging operations, by arrangements worked out by two or more carriers for accepting freight for any one of them, by terminal stations and by



universal stations both on and off line, this situation has been improved but there is still opportunity for advancement.

Conclusions. That railroads cooperate to provide a maximum number of points at which patrons may receive and deliver their shipments.

Motor Trucks vs. Cars. Trap or ferry cars are efficient only in rare instances and economical only when heavily loaded.

Trap or ferry cars were in almost universal use for many years for the interchange of transfer freight between carriers at junctions and for the movement under tariff provisions of l.c.l. merchandise traffic between stations and industries. The service is slow, usually requiring not less than 24 hours and when all the elements are considered is expensive. The use of motor vehicles by carriers in collection and delivery service has been in instances extended to the transfer traffic, the arrangement saving from 24 to as high as 72 hours and being found economical as well.

Conclusions. (a) That l.c.l. merchandise transferred between stations of the railroads at junction be generally handled with highway vehicles.

(b) That single minimum weight be established on trap cars moving between industry and railroad containing traffic for two or more roads party to a joint station, such arrangement to be authorized by joint or agency tariff.

(c) That trap car traffic moved in either direction between stations and industries be handled, under tariff provision, at the option of the carrier either in trap car or with highway vehicle.

Unrestricted C&D Service. Public requirements cannot be satisfied with a l.c.l. merchandise service any less complete, rapid and economical than that now being furnished by trucks.

The loss of l.c.l. merchandise traffic to highway vehicles which the railroads have suffered in the last few years, the extent to which store-door pick-up and delivery service is used in the older countries abroad, and the reception given to such service when inaugurated by the railroads in this country are reasonable proof of the desire of the public for a completed transportation service, which the railroads are in position to give through a combination of rail, highway and store-door service. Truck competition can best be met in this way and some such coordinated service should be provided or the field abandoned as far as possible.

Conclusions. (a) That free pick-up and delivery service coordinating rail and highway be established by the Railways on l.c.l. merchandise at not higher than minimum station-to-station rates, without restriction as to size, weight, or distance handled.

(b) That tariff provisions require prepayment in full of transportation charges on all traffic moving at less carload rates.

Highways vs. Way Freight. Way freight service does not now and cannot be made to satisfactorily meet public requirements created by truck competition.

The slowest and probably one of the most expensive services which the railroads perform is the distribution of l.c.l. merchandise traffic by way or local freight, the run usually requiring a day, often beginning or ending in the night and recently because of decreased traffic operating only on triweekly or semiweekly schedules. Interference of other traffic makes the movement of the train irregular and the service to the public anything but satisfactory and the loss of traffic to trucks is in large part at least attributable to the service.

Conclusions. That where hard surfaced highways parallel railroads, l.c.l. merchandise originating at or destined to small outlying stations be handled by motor vehicles to and from concentrating and distributing stations.

Simplification of Packing Requirements, Classifications and Tariffs. Classifications and rate sheets should be so compiled that the public may use railway transportation without being penalized.

Under the law the user of railway transportation is held responsible for the payment of proper tariff charges and any deficiency in the amount paid must be made good by him regardless of the circumstances surrounding the quotation and use of the rate, or that it may absorb many times over the profit in the transaction. In no other line of business is there such burden placed on the customer, hence there is a heavy moral obligation upon the Railways to so compile classification and tariffs that the ordinary business man need make no mistake in their use.

Conclusions. (a) That the three territorial ratings now carried in the Consolidated Freight Classification be reduced to one, same to apply on both interstate and intrastate traffic, the number of classes on l.c.l. merchandise be reduced and the description of articles simplified.



(b) Packing requirements and tariffs be simplified and class and l.c.l. commodity rates amended so there will be no necessity for alternate application.

Tariff Filing Requirements. The requirements of the Interstate Commerce Commission in connection with the filing of tariffs at small and at joint stations are out of line with present day commercial and railway needs, causing unnecessary expense for tariffs, and work in handling them.

Where Central Rate Bureaus or Master Agencies have charge of rates and billing in terminals, districts or divisions, with telephone, telegraph and frequent mail service, and with General and Divisional traffic offices readily accessible to the public and to outlying agencies, present requirements as to tariff filing are unnecessarily burdensome, and may properly be amended.

Regulations make no distinction as to the filing of tariffs at joint stations and each road party to such an arrangement maintains complete sets of tariffs resulting in duplication of joint and agency issues with heavy expense for tariffs and for work in recording and handling them without any benefit whatever to the public.

Conclusions. (a) That regulations governing the filing of tariffs be amended to permit each carrier party to a joint agency to furnish only its own local tariffs, the railroad operating the station to supply without duplication the joint and agency tariffs necessary for the proper operation of the station, dividing the expense thereof on just and equitable basis.

(b) That the filing of tariffs at small stations, and stations under the jurisdiction of Rate Bureaus or Master Stations be left to the option of the railroad.

Station Cost-Production Reports. Proper control of the expenses of its stations requires that a railroad compile its operating statistics on a uniform basis at all points. For the benefit of comparison between stations of different railroads, the methods should be identical on all roads.

Comparison of system results between railroads should be made semiannually or ortener, based on percentage of expenses to revenues until a more satisfactory one can be devised.

With due regard to satisfactory service to the public one of the most important features of station operation is individual station results as reflected in unit cost and man hour output per bill made in office and per ton of freight handled in warehouse, and the carrier's system cost for such service expressed as a percentage of revenues.

Comparison of operating results among stations of a carrier or between stations of different carriers, or between railroad systems is on the above basis, which is the best yet devised for measuring their efficiency. It is, therefore, highly important that the information on which the figures are based be compiled accurately and as far as practical on a uniform basis.

Reasonable control of station expenses compel Agents and Warehouse Foremen to have before them constantly the volume and unit results this day and to date with comparison with previous year's figures, and this day's figures must be available at the earliest possible moment.

The maintaining of records within the station cannot be depended upon to assure the attention which expenses justify and detailed daily reports covering office and warehouse operation of principal stations should be made and forwarded to supervisory officers.

Conclusions. (a) That records be maintained at important stations showing separately the office and warehouse, and by principal classes of employees, man hours, wages, overtime, unit cost, man hour production for the day and accumulated to date for the month, with comparison against the previous year and daily report thereof initialled personally by the Agent and Warehouse Foreman be sent daily to the Superintendent and Station Supervisory Officers.

(b) That railroads formulate and adopt generally a uniform basis of compiling station and system station operating results.

Simplifying Demurrage Records. There is extensive duplication of effort in recording and reporting cars for demurrage purposes.

Railroads generally require Agents reporting directly or through established demurrage bureaus to render daily, weekly, or semimonthly reports listing all cars placed for loading or unloading, showing name of shipper or receiver, car initial and number, time and date of arrival, placement, release, and mailing of notice, whether demurrage charges accrue or not. Similar information is retained at stations in book record and is subject to inspection by railway or bureau representatives.

Conclusions: That as far as practical demurrage records and reports be made at one writing with carbon and where this cannot be done that only cars on which demurrage accrues be transcribed to reports made by Agents.



Combined Switching-Reclaim Reports. The making of separate statements showing car initial, number, etc., causes unnecessary work in preparing and checking terminal per diem reclaims.

At nearly all junction points terminal per diem reclaims are prepared by agent of road entitled to the reclaim and checked by agent of road-haul carrier.

All cars subject to a terminal per diem reclaim are carried on interline switching statements or abstracts and at some few junction points the interline switching statements are used as basis for settling terminal reclaims. The agent of road delivering cars in interchange prepares summary in quadruplicate showing switching statement sheet numbers and the number of cars on each subject to terminal per diem reclaim by both delivering and receiving carriers.

Conclusions. That interline switching statements be used as basis for settling terminal per diem reclaims and that agent of road delivering cars in interchange prepare summary showing number of cars on which each line is entitled to reclaim furnishing receiving line with necessary copies.

Milling in Transit. The shipping public is entitled to the most convenient method of settlement that can be afforded consistent with good accounting.

Dividing rates at transit point causes unnecessary adjustments with transit operators and extra work on account of errors made in dividing rates.

There are a number of methods employed in billing commodities that have been granted transit privileges. The necessity for collecting charges on movement into transit points, and dividing revenue so that each participating carrier may receive its proper proportion causes adjustments by corrections on billing through interline settlement or claim channels.

These difficulties are increased when rates are divided and corrections issued at stations where fully experienced rate clerks are not employed or a full line of division sheets not available and to require payment on basis of combination of rates in and out of transit point places an undue burden on customers.

Conclusions. That transited traffic be billed from transit point to destination at balance of through rate, tariffs, where necessary, being changed accordingly.

Abolishment of TBA Pro Bills. A considerable part of the value of through interline billing is lost because of the extensive recording and reporting methods used at junctions.

Through interline waybilling is economical, and expedites traffic through junctions but it creates at each junction operating and traffic problems which are usually met by making through bill pros commonly known as TBAs which are copies of the waybill. These pros are used for obtaining receipts from draymen and connecting line, and for accounting and traffic purposes.

Conclusions. (a) That an abstract in manifold be made of such bills and TBA pros discontinued, receipt and record of exceptions to be noted on the abstract. If l.c.l. shipments are moved by vehicle, copy of the abstract to be used in support of drayage charges.

(b) That Railway Accounting Officers' Association require interline waybills to be printed by all carriers with such number of additional parts as are necessary to meet the need at junctions on traffic moving over the average number of roads.

Employees Examinations. The duties and responsibilities of large freight stations are so diversified and their dealings with departments and individuals both of the public and of the railway itself so extensive that men of long service and careful training are essential to an efficient service.

For many years each railroad station was a separate seniority district, larger stations being further divided in departmental units covering the important branches of station work such as accounting, rating, etc. Employment usually began at the bottom, promotion being from the ranks and men working up as fast and as far as capacity warranted. Under this plan men not only knew the work of the station and were qualified for promotion but the employing officer was fully advised as to their fitness and ability. Due to alleged unjust or unfair working of the plan, as time passed, station seniority only prevailed, then terminal and at this time division rights often extending over a Superintendent's territory of several hundred miles are effective covering the several Departments.

Under present conditions employees bid from one station to another or switch between departments or branches in a terminal and employing officers are frequently without adequate knowledge of capacity, necessitating assignment of unqualified men with resulting interruption to the carriers' service and penalizing public and carrier alike.

Conclusions. That railroads, after careful study of the kind and volume of work done at its stations, establish rank or grade for each station, and devise methods for examining in groups at stated periods employees seeking promotion to



Agents and other key station positions, awarding to successful applicants certificates showing grade of station and title of position to which eligible, applications for positions to carry the grade and number of this certificate, and award of position to be made to senior employee applying who holds proper certificate.

Improved Mechanical Messenger Service. Regular, frequent, dependable and economical station messenger service of reasonable capacity for the handling of waybills, freight bills, switching orders, car lists, etc., is necessary in the efficient operation of freight stations.

The efficient and economical operation of freight stations, due to more or less remote location of offices, warehouses, yards, etc., is frequently dependent upon messenger service required in the handling of shipping orders, waybills, lists of cars, etc., the service being performed by boys on foot or on bicycles, with automobiles or with pneumatic tubes. Service by messenger boy or by automobile is necessarily infrequent, not entirely dependable as to regularity, expensive, but has great flexibility as to routes traveled and packages carried. The pneumatic tube provides a frequent fast service of restricted capacity, is extremely expensive as to installation and operation, and is not entirely free from mechanical failures.

A messenger service more regular and frequent than boy or automobile but less expensive than pneumatic tubes is important to the proper operation of freight stations.

Conclusions. That Railways individually or jointly study the practicability of a light, flexible, mechanical carrier, preferably electrical, as substitute for messengers, automobiles and pneumatic tubes.

Waterway

Station expense of reporting water carriers amounted to $14,000,000 which was 11 percent of total freight expenditures and 18 percent of total transportation expenses. Common carriers spent for station operations $12,783,000 or 12 percent and 20 percent, respectively, of total freight and total transportation expenditures, for contract carriers similar figures were $989,000 or 7 percent and 10 percent, and for private carriers they were $306,000 or 4 percent and 5 percent.*

Station expenses and percentages of total freight and total transportation expenditures, respectively, for the different classes of carriers in the several districts or services were - Atlantic Coast common $3,198,000 or 14 percent and 22 percent, others $47,000 or 1 percent and 2 percent;

* Analysis 93.3.

Atlantic Gulf common $1,683,000 or 11 percent and 19 percent; Intercoastal common $4,237,000 or 10 percent and 17 percent, others $57,000 or 18 percent and 29 percent; Inland Waterways common $1,685,000 or 21 percent and 36 percent, others $8,000 or 1.6 percent and 2.5 percent; Great Lakes common $829,000 or 10 percent and 19 percent, others $1,087,000 or 7 percent and 10 percent; and Pacific Coast common $1,150,000 or 9 percent and 17 percent, others $97,000 or 13 percent and 16 percent.*

Petroleum

Agency costs of petroleum pipe line companies in 1932 aggregated about 1 1/2 million dollars, representing a ratio to revenue earned of 1 percent. This was equivalent to $17 per route mile, 2 cents per net ton of traffic originated and .1 mill per net ton mile.#

Movement costs in 1932 amounted to 17 1/4 million dollars, a ratio of 8 percent of revenue. This amounted to $186 per mile of pipe line operated, 19 cents per net ton of traffic originated and .5 mill per net ton mile.#

## 95. Assemblage of Carlots into Cargo Loads

Railway

The word "assemblage" is used to describe yard transportation functions in the aggregate. These functions consist of: Classification of cars before and after movement in road-haul service, either for final delivery, interchange or initial or further movement in road service; the interchange of cars between carriers; and the transfer of cars between different yards of the same carrier and the switching of cars to and from house, team or industry tracks.

These costs aggregated in 1932, 311 million dollars or 12 percent of carrier freight revenues, and 16 percent of total costs. They cost 58 dollars per train operated, about 11 1/2 dollars per car originated, 80 cents per train mile and 3 cents per loaded car mile.ø

Ordinarily the costs of these functions are not separately kept by carriers. The estimate herein is based upon the locomotive hours employed in each, in the large number of tests which were made in connection with the study.

Waterway

Certain types of expenditures could be definitely distinguished as assemblage costs. For all reporting carriers these amounted to $5,560,000 which was 4 percent of total freight expenditures and 7 percent of total transportation expenses. For common carriers such

* Analysis 93.3. # Analysis 93.1.
ø Analyses 93.1, 93.2.



expenditures amounted to $5,139,000 or 5 percent of total freight expenses and 8 percent of total transportation expenditures, while for contract carriers similar figures were $368,000 or 3 percent and 4 percent; and for private carriers $54,000 or .7 percent and .9 percent.*

On the Atlantic Coast, common carriers spent in 1932 for assemblage $2,144,000 or 9 percent of total freight expenditures and 15 percent of total transportation expenses, and other carriers spent $304,000 or 7 percent and 11 percent, respectively, of total freight and total transportation expenditures for assemblage.*

In the other districts by classes of carriers the sums expended and percentages of total freight and total transportation expenses, respectively, were - Atlantic Gulf common $774,000 or 5 percent and 9 percent, others $6,000 or .6 percent and .7 percent; Intercoastal common $1,083,000 or 2 percent and 4 percent, others $6,000 or 2 percent and 3 percent; Inland Waterways common $509,000 or 6 percent and 11 percent, others $14,000 or 3 percent and 4 percent; Great Lakes common $244,000 or 3 percent and 6 percent, others $93,000 or .6 percent and .9 percent; and Pacific Coast common $385,000 or 3 percent and 6 percent.*

These assemblage expenditures were broken down between dock assemblage and lighterage expenses. For all reporting carriers, dock expenses amounted to $4,048,000 which was 3 percent of the total freight expenditures and 5 percent of total transportation expenses. For common carriers, such expenditures amounted to $3,914,000 or 4 percent of total freight expenses and 6 percent of total transportation expenditures, while for contract carriers similar figures were $79,000 or .6 percent and .8 percent, and for private carriers $54,000 or .7 percent and .9 percent.*

On the Atlantic Coast, common carriers spent, in 1932, for assemblage $1,414,000 or 6 percent of total freight expenditures and 10 percent of total transportation expenses, and other carriers spent $16,000 or .4 percent and .6 percent, respectively, of total freight and total transportation expenditures for assemblage.*

In the Atlantic Gulf service, similar figures were for common carriers $438,000 or 3 percent and 5 percent, and for other carriers $6,000 or .6 percent and .7 percent.

In the Intercoastal trade, the figures were for common carriers $1,007,000 or 2 percent and 4 percent, and for other carriers $6,000 or 2 percent and 3 percent.*

* Analysis 93.3.

On the Inland Waterways, such figures were for common carriers $494,000 or 6 percent and 11 percent, and for other carriers $14,000 or 3 percent and 4 percent.*

On the Great Lakes, similar figures were for common carriers $244,000 or 3 percent and 6 percent, and for other carriers $91,000 or .6 percent and .9 percent.*

On the Pacific Coast, common carriers spent $318,000 for assemblage or 3 percent of total freight expenses and 5 percent of total transportation expenditures, but other carriers in this district reported no such expenditures.*

Lighterage expenses were incurred by some carriers in some districts. The total amount of lighterage expenses reported amounted to $1,514,000 or 1 percent of total freight expenditures and 2 percent of total transportation expenses. Common carriers spent $1,224,000 for lighterage which was 1 percent of their total freight expenses and 2 percent of their total transportation expenditures, contract carriers spent $290,000 or 2 percent and 3 percent, respectively, of their total freight and transportation expenses for lighterage, but private carriers reported no such expenses.*

The districts, class of carriers, sums expended and percentages of total freight and total transportation expenditures, respectively, were - Atlantic Coast common $730,000 or 3.1 percent and 5 percent, contract $288,000 or 6.7 percent and 10 percent; Atlantic Gulf common $336,000 or 2.2 percent and 3.9 percent; Intercoastal common $76,000 or .2 percent and .3 percent; Inland Waterways common $15,000 or .2 percent and .3 percent; Great Lakes contract $2,000 or .01 percent and .02 percent; and Pacific Coast common $67,000 or .5 percent and 1 percent.*

Petroleum — The cost of assembling traffic for movement by pipe lines amounted, in 1932 to over 9 million dollars. This amounted to 4 percent of the revenue earned and was equal to an expense of $98 per route mile of pipe line operated. This was equivalent to 11 cents per net ton and to .3 mill per net ton mile of traffic transported.#

## 96. Classification (Marshalling) of Cars

Railway — Judged by results of the tests which underlie the report, about 40 percent of the total time of yard locomotives is employed in classification service. The average time shown by tests in the Eastern Metropolitan Terminals was 37 percent; metropolitan terminals

* Analysis 93.3. # Analysis 93.1.



in the South, 54 percent; in the West and the country as a whole, 39 percent. The average time in the Eastern Major Terminal areas was 41 percent and for similar areas in the South, 44 percent, in the West 51 percent, and the nation, 48 percent.* Statistically there was an average of 7.3 classifications for every car originated in 1932. in an average haul of 353 miles# and at an average cost of 62 cents each.ø Relatively the cost of classification was about one third as great as the total cost of road transportation expense./ It was 6.5 percent of total rail costs; aggregated $24 per train, $4.71 per car, 33 cents per train mile, and 1.2 cents per car mile.** The cost per classification varied from 47 cents in Southwestern Territory to 81 cents in Southeastern Territory, and the number of minutes per classification from 2.9 in New England Territory to 6.2 in Southeastern Territory.##

The necessity for classification is partly in the number of trains in which the average car is hauled - 4 1/2 trains.øø Since the average journey is 353 miles, the average journey in each train is under 79 miles.

* Analysis 95.2.
\# Analysis 45.17.
ø Of the total switch engine hours amounting to 36 million, (analysis 105.1), 40 percent or 14.4 million hours were spent classifying the 27.1 million cars originated (analysis 3.2). Thus .53 hour (14.4 divided by 27.1) or 32 minutes was spent in classifying the composite car throughout its journey. As 4.4 minutes were required per classification (analysis 95.2) the average number of classifications per car originated amounts to 7.3 (32 divided by 4.4). Transportation cost per switch engine hour amounted to $8.29. (exhibit 521), or 13.8 cents per minute, so that the average cost per classification was 62 cents (13.8 multiplied by 4.4).
/ Analyses 93.1 and 95.1.
** Analysis 95.1.
## Expense per switch engine hour $7.43 in Southwestern and $7.88 in Southeastern, (exhibit 521). Average time per classification, 3.8 minutes in Southwestern and 6.2 minutes in Southeastern, (analysis 95.2).
øø Total cars originated 27 million; average cars per train 26; trains required if each ran average haul, 1,167 thousand; actual trains operated, 5 1/4 million; ratio 4 1/2.

## 97. Transfer of Cars from Yard to Yard

**Railway** Transfers are of two kinds - single carrier where the movement is between yards of the same carrier in the same terminal, and multiple carrier where cars are transferred (interchanged) from one carrier to another. These switching operations are made necessary by the maintenance of separate carrier yards in the same terminal area. In 1932 their cost aggregated 100 million dollars, which was 5 percent of the total rail cost. A little over 30 percent of switch engine time was employed in transferring cars between yards of the same or different carrier. The cost per train was $19, per car originated just under $3.69 and per car mile 1 cent.* On the average, every car originated in the average journey of 353 miles underwent 5.8 transfers including interchanges or 4.1 transfers excluding interchanges.#

The foregoing costs did not vary greatly between the different territories. The cost of these two functions (transfers and interchanges) varied from 2 percent of total rail cost in Pacific Northwest Territory to 7 percent in Trunk Line Territory. The cost per train mile varied from 9 cents in Pacific Northwest and Pacific Southwest Territories to 53 cents in Trunk Line Territory, and the car mile cost from 3.2 mills in Pacific Northwest Territory to 16.9 mills in Trunk Line Territory.ø

## 98. Industrial Switching of Cars

**Railway** The remainder of yard locomotive time - 28 percent - was employed in switching cars between delivery tracks and initial or final yards. In 1932 this aggregated 83 million dollars, or $3.07 per car originated and 8 mills per car mile./ The full delivery cost embracing all functions is discussed more fully in a later connection.

**Waterway** The cost of lighterage of water carlot carriers is discussed in Section 95.

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* Analysis 95.1.

\# Of 36.1 million total switch engine hours, 30.45 percent were spent in transfer of cars (analysis 95.2) amounting to 11.9 million hours or .44 hours (26.2 minutes) per car originated. Average time consumed per transfer was 4.5 minutes (analysis 95.2) so average number of transfers per car originated amount to 5.8 (26.2 divided by 4.5). Transfers excluding interchanges consumed 24.59 percent of total switch engine hours or 8.9 million hours. This amounted to .33 hours (19.7 minutes) per car originated. The average time consumed per transfer was 4.8 minutes, so the average number of transfers per car originated amounted to 4.1 (19.7 divided by 4.8), analysis 95.2.

ø Analysis 95.1.

/ Analyses 95.1, 95.2.



## 99. Road Movement of Cars

**Railway** Road transportation expense consists primarily of direct cost of operating trains, including necessary supplies. The total cost for the country as a whole amounted to about 13 percent of total revenues and 17 1/2 percent of total costs; about $64 per train; about $13 per car originated; 53 cents per ton originated; $14 per train hour; 88 cents per train mile; and 3 1/3 cents per car mile.* Highest costs were found in Trunk Line and New England, about $1.15 per train mile and 4 cents per car mile. The lowest costs were in the Southeastern and Southwestern Territories, about 72 cents per train mile and 3 1/3 cents per car mile. In Central Territory the train mile cost was 83 cents and the car mile cost just under 3 cents.#

**Waterway** Voyage expenses of reporting water carriers in 1932 amounted to $59,400,000 which was 45 percent of their total freight expenditures and 75 percent of total transportation expenses. For common carriers, voyage expenses amounted to $45,930,000 or 42 percent and 72 percent of total freight and transportation expenses, respectively, for contract carriers, similar figures were $8,101,000 or 58 percent and 86 percent; and for private carriers, they were $5,338,000 or 67 percent and 94 percent.*

Voyage expenses and percentages of total freight and total transportation expenditures, respectively, for the different classes of carriers by district were - Atlantic Coast common $9,129,000 or 39 percent and 63 percent, others $2,509,000 or 58 percent and 88 percent; Atlantic Gulf common $6,257,000 or 41 percent and 72 percent, others $762,000 or 77 percent and 99 percent; Intercoastal common $19,572,000 or 46 percent and 79 percent, others $135,000 or 42 percent and 69 percent; Inland Waterways common $2,503,000 or 31 percent and 53 percent, others $295,000 or 63 percent and 93 percent; Great Lakes common $3,290,000 or 39 percent and 75 percent, others $9,223,000 or 61 percent and 89 percent; and Pacific Coast common $5,179,000 or 42 percent and 77 percent, others $515,000 or 67 percent and 84 percent.ø

**Petroleum** The expense of moving petroleum via pipe line is shown in analysis 93.4.

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* Analysis 93.1.

ø Analysis 93.3.

\# Analysis 93.2.

## XXVI TRANSPORT OVERHEAD

### 100. Transport Overhead Costs

Railway

Overhead costs consist of "general expenses" and "traffic expenses", (which in the underlying statistics are frequently consolidated under the single head of "administration expense",) taxes and risk. The latter is the amount paid by carriers to patrons for loss and damage to or in connection with freight shipments.

Overhead expense in 1932 aggregated about 371 million dollars, 15 percent* of the revenue and 19 percent of total costs.# It constituted a burden of 1,529 dollars per mile of road, 13.68 dollars per car, and 3.59 cents per car mile.* These costs were highest in Trunk Line Territory where they aggregated 3,788 dollars per route mile and 4 1/3 cents per car mile, and lowest in the Pacific Northwest where they amounted to 795 dollars per route mile and 2.98 cents per car mile.#

Although next to the cost of capital servicing, these costs probably are the most static of rail costs, there is no evidence that they decrease with the density of traffic. The contrary seems true. From the standpoint of gross ton mile density per mile of road, the standing of the several rate territories, beginning with highest density are: Trunk Line first, Pocahontas second;ø Central third; New England fourth; Pacific Southwest/ fifth; Southeastern/ sixth; Western Trunk Line seventh; Pacific Northwest eighth; and the Southwestern ninth.** The rank of the territory from the standpoint of highest overhead cost per traffic unit - car miles - are Trunk Line first; New England second; Southeastern third; Central fourth; Western Trunk Line fifth; Pocahontas sixth; Southwestern seventh; Pacific Southwest eighth; and Pacific Northwest ninth. If the gross ton miles be used as the cost unit, New England is highest; Trunk Line second; Southeastern third; Western Trunk Line fourth; Central fifth; Pacific Southwest sixth; Southwestern seventh; Pacific Northwest eighth; and Pocahontas ninth.#

Petroleum

The overhead cost of petroleum pipe line transportation companies in the United States in 1932 amounted to about 25 1/2 million dollars, distributed among the following items; administration costs, about 9 3/4 million, general expenses, about 9 3/4 million, and taxes approximately 16 million dollars. The ratio of the total overhead expenses to revenue earned in 1932 amounted to 12 percent. This was equivalent to $277 per mile of pipe line operated, 31 cents per net ton of traffic, and .8 mill per net ton mile.*

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* Analysis 100.1. # Analysis 100.5.
ø From a net ton-mile standpoint,Pocahontas is first and Trunk Line second.
/ On a net ton-mile basis Southeastern and Pacific Southwest change places. ** Analysis 70.6.



### 101. Transport Taxes

Railway

Taxes paid by railways in 1932 constituted 8 percent of their revenue* and 10 percent of rail costs.# The cost ratio was highest in the Pocahontas and lowest in the Southwest. Taxes averaged $796 per mile of road in the nation $1,972 in Trunk Line Territory $1,245 in Pocahontas, $1,180 in Central Territory, $1,012 in New England; $619 in Southeastern Territory; $608 in the Pacific Southwest; $552 in Western Trunk Line; $414 each in Pacific Northwest and Southwestern.# The cost of taxes per car owned was about $90 each.ø The tax burden upon each car originated averaged $7 and varied from $5 in New England to $11 in the Pacific Northwest. The cost per loaded car mile ran from 1 1/2 cents in Pacific Northwest and Pacific Southwest to 2.2 cents in Trunk Line and New England.#

Waterway

The total amount of taxes paid in 1932 by reporting water carriers was reported as $1,100,000 or .9 percent and 3.7 percent of total freight and total overhead expenditures respectively. For common carriers, similar figures were $944,000 or .9 percent and 3.5 percent, for contract carriers, $111,000 or .8 percent and 4.7 percent and for private carriers, $67,000 or .8 percent and 8.7 percent, respectively./

By districts and by class of carrier, taxes paid and percentages of total freight and total overhead expenditures respectively were - Atlantic Coast common $589,000 or 2.5 percent and 13.3 percent, others $42,000 or 1 percent and 8.5 percent; Atlantic Gulf common $78,000 or .5 percent and 3.4 percent; Intercoastal common $20,000 or .05 percent and .2 percent; Inland Waterways common $47,000 or .6 percent and 3.4 percent; others $26,000 or 5.5 percent and 30.2 percent;** Great Lakes common $141,000 or 1.7 percent and 5.4 percent, others $108,000 or .7 percent and 4.5 percent; and Pacific Coast common $69,000 or .6 percent and 1.7 percent, others $3,000 or .4 percent and 3.1 percent.##

Petroleum

The taxes paid by petroleum pipe lines in 1932 amounting to over 16 million dollars represented a ratio of 8 percent of the total revenue earned, $173 per mile of pipe line operated, 19 cents per net ton of traffic originated and .5 mills per net ton mile.øø

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* Analysis 100.1. # Analysis 100.5.
ø 193 million dollars divided by 2,166 thousand cars.
/ Analysis 100.1.
** The low percentages shown for common carriers in this district are influenced by the inclusion in this group of the Inland Waterway Corporation.
## Analysis 100.2. øø Analysis 100.3.

Highway

Truck operators do not or cannot segregate their tax items in such a way as to make them susceptible to analysis. Some taxes are variable with mileage, others are fixed on a yearly basis, and still others are based on property values. Moreover, gasoline and oil taxes are almost always included with the costs of gasoline and oil.

The national average State gasoline tax rate, the national average local gasoline tax rate, and the Federal tax rate on gasoline and oil are readily obtainable. To apply these to consumption data would seem a more logical and more accurate procedure. In 1932 the total gasoline taxed by States yielded an average of 3.6 cents per gallon. When added to the total gasoline taxed locally the yield rises to 3.63 cents per gallon. With 1 cent per gallon added as the Federal tax, the total becomes 4.63 cents per gallon. This was applied, as was also the Federal oil tax rate of 1 cent per quart.

License fees were a more difficult consideration. The Bureau of Public Roads conducted a survey of the payments made in 1932, according to vehicles of various capacity classifications in the contract, common carrier, and private motor vehicle groups.

Certain vehicles were unassignable to the capacity classifications due to lack of data. For purposes of this study these were allocated according to the percentage distribution of the assignable vehicles.

Certain amounts were likewise unassignable. These were allocated according to the distribution of the assignable amounts.

Certain special fees (considered here as variable fees) were similarly unassignable and these also were allocated, but on the basis of the distribution of the fixed fees, the amount in this instance being relatively large.

For-hire fees per vehicle were then determined by adding the vehicles and fees of the several common and contract carrier groups.

The fees for the several trailer groups were added to the fees of the appropriate trucks to determine the tax on combinations.

The detailed procedure and calculations are presented in the Coordinator's report on Motor Vehicle Subsidy. The following payments are revealed.



State Registration and License Fee Payments

Per Truck, 1932.

| Average Gross Weight, lbs. | For-hire Trucks | Private Trucks | For-hire, in Excess of Private |
|---|---|---|---|
| 6,608 | $ 22.96 | $ 15.47 | $ 7.48 |
| 9,467 | 52.11 | 38.13 | 13.98 |
| 12,910* | 53.49 | 31.98 | 21.51 |
| 14,526 | 87.40 | 67.44 | 19.96 |
| 16,088* | 116.91 | 76.25 | 40.66 |
| 19,083 | 127.54 | 98.33 | 29.21 |
| 19,083* | 186.14 | 132.34 | 53.80 |
| 26,022 | 151.52 | 115.97 | 35.55 |
| 32,427* | 275.14 | 180.91 | 94.23 |

Since by far the greater part of the difference between the private and for-hire payments is in the form of special fees based on extent of operation - usually mileage, ton mileage, gross receipts, etc., - it is here regarded as a variable expense.

Operator returns show inclusions which are not determinable over and above these figures developed from the Bureau of Public Roads' 1932 survey. Local fees and property taxes on the vehicles make up, perhaps, the major part of the difference. On the basis of this assumption and such facts as to property taxes as were available, a 1 1/2 percent rate was applied to vehicle price as a fair estimate of general taxation plus a small average local fee.

* Combination (tractor semitrailer).

102. Administrative Cost

Railway

Freight traffic and general expenses aggregated in 1932 178 million dollars, which was equal to 7 percent of freight revenue* and 9 percent of freight costs.# Traffic expense amounted to 3 percent and general expense 6 percent of freight costs. The total administrative cost aggregated 6 1/2 dollars per car and 1 7/10 cents per loaded car mile. The ratio of administrative expense to freight cost was highest in Pocahontas Territory and lowest in Southwestern Territory. The cost per car mile was highest in Trunk Line Territory, 2 cents, and lowest in the Pacific Northwest, 1 2/5 cents. Lowest traffic expense ratios to total freight expense were found in Southwestern, New England and Central Territories; the highest in Southeastern and Pocahontas Territories. The lowest cost per car was found in New England, 1 3/5 dollars and the highest in the Pacific Northwest, 3 3/5 dollars, which, however, had the lowest cost per loaded car mile, just over 5 mills, while the highest was in Trunk Line, 7.4 mills. The Southwest also showed the lowest ratio of general to total expense, 5.7 percent compared with 6.1 percent in the highest territory - Pocahontas. The lowest cost per car was found in New England, 2 4/5 dollars and the highest in Pacific Northwest, 6 3/4 dollars, which, however, showed the lowest general expense per car mile, 9 mills compared with that of the highest territory - 1 1/3 cents in Trunk Line Territory.#

Waterway

Total administration expenses of reporting waterline carriers who reported in detail for 1932 amounted to $29,000,000. This was 22 percent of their total freight expenditures and 96 percent of their total overhead expenses. Similar figures for common carriers were $26,220,000 or 24 percent and 97 percent, for contract carriers $2,235,000 or 16 percent and 95 percent; and for private carriers $706,000 or 9 percent and 91 percent.*

For common carriers and other carriers by districts, the total amount of administration expenses and percentages of total freight and total overhead expenditures for 1932 were - Atlantic Coast common $3,851,000 or 16 percent and 87 percent, others $453,000 or 11 percent and 92 percent; Atlantic Gulf common $2,241,000 or 15 percent and 97 percent, others $3,000 or .3 percent and 99 percent; Intercoastal common $12,383,000 or 29 percent and 99 percent, others $33,000 or 10 percent and 100 percent; Inland Waterways common $1,330,000 or 16 percent and 97 percent, others $60,000 or 13 percent and 70 percent; Great Lakes common $2,450,000 or 29 percent and 94 percent, others $2,300,000 or 15 percent and 96 percent; and Pacific Coast common $3,965,000 or 32 percent and 98 percent, others $93,000 or 12 percent and 97 percent.ø

* Analysis 100.1. # Analysis 100.5.
ø Analyses 100.2 and 100.3.



Administration expenditures were broken down into traffic and other or general. Traffic expenses for all reporting carriers amounted to $12,000,000 or 9 percent of total freight expenditures and 40 percent of total overhead expenses. For common carriers, similar figures were $11,619,000 or 11 percent and 43 percent, for contract carriers $383,000 or 3 percent and 16 percent, and for private carriers $119,000 or 1 percent and 15 percent.*

Traffic expenditures for the different classes of reporting carriers in the several districts, and percentages of total freight and total overhead expenses, respectively, were - Atlantic Coast common $1,995,000 or 9 percent and 45 percent, others $53,000 or 1 percent and 11 percent; Atlantic Gulf common $1,552,000 or 10 percent and 67 percent, others $3,000 or .3 percent and 99 percent; Intercoastal common $4,891,000 or 12 percent and 39 percent, others $10,000 or 3 percent and 30 percent; Inland Waterways common $446,000 or 5 percent and 32 percent, others $32,000 or .7 percent and 37 percent; Great Lakes common $889,000 or 11 percent and 34 percent, others $396,000 or 3 percent and 16 percent; and Pacific Coast common $1,846,000 or 15 percent and 46 percent, others $8,000 or 1 percent and 8 percent.#

General expenses of all reporting carriers amounted to $17,000,000 or 13 percent of total freight expenditures and 56 percent of total overhead expenses. Common carriers spent, in 1932, for general expenses $14,601,000 or 13 percent of their total freight expenditures and 54 percent of their total overhead expenses. For contract carriers, similar figures were $1,852,000 or 13 percent and 79 percent, and for private carriers, they were $587,000 or 7 percent and 76 percent.*

General expenses and percentages of total freight and total overhead expenditures by districts and classes of carriers for 1932 were - Atlantic Coast common $1,855,000 or 8 percent and 42 percent, others $399,000 or 9 percent and 81 percent; Atlantic Gulf common $690,000 or 5 percent and 30 percent; Intercoastal common $7,492,000 or 18 percent and 60 percent, others $23,000 or 7 percent and 70 percent; Inland Waterways common $885,000 or 11 percent and 64 percent, others $28,000 or 6 percent and 33 percent; Great Lakes common $1,561,000 or 19 percent and 60 percent, others $1,904,000 or 13 percent and 79 percent; and Pacific Coast common $2,119,000 or 17 percent and 53 percent, others $85,000 or 11 percent and 89 percent.#

* Analysis 100.1. # Analyses 100.2 and 100.3.

Petroleum — Administration expenses and general expenses, amounting to over 9 1/2 million dollars, represent the following unit expenses; 5 percent of the revenue earned, $104 per mile of pipe line operated, 12 cents per net ton and .3 mill per net ton mile.*

No distribution was made of the traffic costs as these expenses were absorbed in administration and general expenses.

Highway — General overhead includes such items of office, garage, and shop overhead and management, clerical, and superintendence salaries and wages as are not directly attributable to any of the foregoing items Operators were asked in the questionnaire to include terminal and platform costs.

Variety in this item was very great for private operators but somewhat better conformity was found with the data furnished by the for-hire concerns. The trend of the curve applicable to the latter group was fitted to both sets of data on the basis of the indicated mean coefficient for the group averages. The equations are:

General overhead, for-hire, dollars, =

$$8 \text{ (gross weight, lbs.)}^{0.5}$$

General overhead, private, dollars, =

$$4.25 \text{ (gross weight, lbs.)}^{0.5}$$

Eighty percent of the amounts in both instances represents payroll items.

It will have been noted perhaps, that differences between for-hire and private trucks are only infrequently recorded. This is true. But they have been mentioned wherever there was evidence to warrant separate consideration. The real difference occurs in the annual mileage and that difference is reflected throughout most items of expense.

Garage rent includes the rent paid for garage facilities, and taxes, insurance, maintenance, water, and retirement of and interest on investment in building and land used for garaging equipment, or such charges prorated where the property is used jointly for other purposes. In the usual way, with the coefficient determined from the mean of the 6 weight groups, the generalization was reached -

Garage rent, dollars, =

$$12.74 \text{ (gross weight, lbs.)}^{0.25}$$

* Analysis 100.4.



Highway taxes of 8 cents per ton handled are based on an estimated average load of 10 tons per day.

## 103. Insurance

Waterway — The nature of the operations conducted by water carriers makes insurance on equipment an important item of cost. All reporting carriers spent, in 1932, $8,674,000 for insurance which was 6 percent of their total expenses. Common carriers insurance expenses amounted to $6,695,000 or 5 percent of their total expenditures. For contract carriers, similar figures were $998,000 or 7 percent and for private carriers they were $981,000 or 12 percent.*

Insurance expenses and percentages of total expenditures by classes of carriers for the several districts in 1932 were - Atlantic Coast common $1,684,000 or 5 percent, contract $124,000 or 5 percent, private $195,000 or 10 percent; Atlantic Gulf common $1,085,000 or 6 percent, contract $57,000 or 7 percent, private $17,000 or 11 percent; Intercoastal common $2,012,000 or 4 percent, private $37,000 or 12 percent; Inland Waterways common $214,000 or 3 percent, contract $22,000 or 5 percent, private $2,000 or 19 percent; Great Lakes common $696,000 or 6 percent, contract $758,000 or 8 percent, private $728,000 or 14 percent; and Pacific Coast common $1,004,000 or 6 percent, contract $37,000 or 8 percent, private $3,000 or 1 percent.*

Highway — Vehicle insurance data were provided by operators, but the itemized breakdown of the kinds or purposes of the insurance was unavailable. It was felt that the operator's coverage would represent a minimum or would reflect particularly the requirements of some specialized service. In view of the anticipated comparison with rail costs it was further felt that the relative ability of the shipper to recover should be equalized. Moreover, insurance, whether actually carried in terms of a policy or not, seemed to be a charge against costs.

Rates varied between sections of the country, between vehicles of different sizes, between for-hire and private carriers, between long-haul and short-haul operations, with the age and value of the vehicle and the value of the cargo. The problem was not without its difficulties. It was placed before one of the leading commercial motor vehicle insurance agencies of the country whose experience is nationwide. Average rates were made available covering thirty-eight representative cities.

* Exhibit 804.

These average rates* were for items of public liability, property damage, cargo, fire, theft, and driver insurance, on for-hire and private trucks and trailers. They were applied to the average conditions for eight different capacities as represented by this study, resulting in the following totals for for-hire trucks:

| Rated Capacity - Pounds | Insurance Cost - Dollars |
|---|---|
| 2,000 Trucks | 182.73 |
| 4,000 Trucks | 278.69 |
| 6,000 Trucks | 311.06 |
| 10,000 Trucks | 435.84 |
| 30,000 Combinations | 836.82 |
| 40,000 Combinations | 946.61 |
| 50,000 Combinations | 1,055.68 |
| 60,000 Combinations | 1,153.15 |

There was some question as to the wisdom of applying a general cargo coverage to private trucks, but upon the basis of several calculations 75 percent of the total insurance cost of for-hire trucks was taken as representing comparable insurance costs for the private group. Operator data indicated no consistent differences between the two classes. The estimates may be averaged thus:

Vehicle insurance, for-hire, dollars, =

$$0.371 \text{ (gross weight, lbs.)}^{0.717}$$

Vehicle insurance, private, dollars, =

$$0.278 \text{ (gross weight, lbs.)}^{0.717}$$

These average rates* were for items of public liability,

* The 38 cities for which rates were made available are as follows: New York City; Boston, Mass.; Philadelphia, Pa.; Baltimore, Md.; Washington, D. C.; Birmingham, Ala.; Los Angeles, Calif.; San Francisco, Calif.; Denver, Colo.; Hartford, Conn.; Jacksonville, Fla.; Chicago, Ill.; Indianapolis, Ind.; Kansas City, Mo.; Louisville, Ky.; New Orleans, La.; Portland, Maine; Detroit, Mich.; Duluth, Minn.; Jackson, Mich.; St. Louis, Mo.; Helena, Mont.; Lincoln, Nebr.; Jersey City, N. J.; Charlotte, N. C.; Cleveland, Ohio; Columbus, Ohio; Oklahoma City, Okla.; Portland, Oreg.; Columbia, S. C.; Memphis, Tenn.; Salt Lake City, Utah; Seattle, Wash.; Charleston, W. Va.; Milwaukee, Wis.; Dallas, Tex.; Santa Fe, N. Mex.; and Phoenix, Ariz.



## XXVII YARD AND TERMINAL OPERATIONS

### 104. Elements of Yard Operations

Railway

Yard operations are those which take place in terminal areas; road operations, those outside of terminal areas. Terminal operations are those incident to the receipt, collection or delivery, and handling in origin and destination terminals. Line operations include all road operations and operations in yards other than those at origin and destination - "intermediate yardings." It should be borne in mind that in the cost of these several operations, all functions - overhead, roadway, station maintenance, power maintenance, car maintenance, as well as transportation - are included.

The word "terminal" as employed in the survey and the report is used in its narrow meaning to designate carrier activities incident to originating and terminating a shipment. It differs from yard in that the latter embraces all activities which take place in a terminal area, including intermediate yarding and handling of cars passing through the area en route. The service involves two distinct activities - station work and billing necessary for receipt or delivery of shipments, and the actual physical collection and assemblage (or disassemblage) in carrier trains. The former activities include three groups of function costs - station maintenance, transportation, and overhead. The latter include yard, power and car maintenance, yard transportation, and overhead. For convenience the former costs are called "station costs" and the latter "delivery costs", though as stated they cover the work of collection and assemblage as well as delivery.

Localizing all freight costs between road and yard, we find that in 1932, 1,068 million dollars were spent in the latter, which was over 54 percent of total expense.* By rate territories, this percentage ran: New England, 54 percent; Trunk Line, 60 percent; Central 60 percent; Pocahontas, 49 percent; Southeastern, 50 percent; Western Trunk Line, 54 percent; Southwestern, 47 percent; Pacific Northwest, 41 percent; and Pacific Southwest, 45 percent.* If the total yard expense be apportioned between the primary assemblage functions - classification, transfer, interchange and industrial switching - upon the basis of locomotive hours spent in each service, 22 percent of the total freight cost would be assigned to classification, 16 percent to transfers and interchanges, and 16 percent to industrial switching.#

* Analysis 104.4.

\# Analysis 95.2. Yard expense amounts to 54.3 percent of total freight cost (analysis 104.4).

Analyzing the functions which go to make up the rail costs we find the following elements in rail yard costs, stated in percents of the total yard costs: Maintenance of roadway and structure 5 percent; maintenance of power (locomotives and structures) 6 percent; maintenance of cars 29 percent; assemblage 29 percent; operation of station 13 percent; and overhead 18 percent. From a service standpoint these divisions are power 7 percent; cars 36 percent; switching (assemblage and road maintenance) 40 percent; and station 17 percent.*

Included within these yard operations are terminal yardings, i.e., those which pertain to the origination and termination of cars; and intermediate yardings, those which pertain to the handling of cars in yards other than those at origin and destination. Separation of these two classes of yardings was made possible by a large number of terminal studies conducted by the carriers. Application of these studies to the actual costs of the yards reveals that 32 percent of the yard expenses were for intermediate and 68 percent for terminal yardings.#

Road expenses are made up of the following functional elements - maintenance of way and structure 21 percent; maintenance of equipment 19 percent; transportation 40 percent; and overhead 20 percent. From a service standpoint they group into power maintenance 20 percent; car maintenance 4 percent; train movement 74 percent; and station 2 percent.ø

## 105. Terminal Operations

Railway

The carriers reported 1,517 points at which switch engines were operated, and 4,750 yards. In 1932, 198 thousand industry tracks (including duplications) were served, upon which there were originated or terminated 32 million cars. Of these tracks 75 thousand were in the Eastern District, accounting for 17 million cars; 29 thousand in the South, accounting for 6 million cars; and 94 thousand in the West, accounting for 9 million cars.

In these terminals, 36 million engine hours were employed in assemblage operations. The carriers reported 88 thousand miles of yard track/ with a capacity of 8 million cars (more

* Exhibit 521.

# Total yarding expense 1,068 million dollars, from analysis 104.4; terminal yarding expense 729 million dollars from analysis 106.4; remainder is intermediate yarding expense.

ø Exhibit 440.

/ Analysis 105.4. Reports to the Commission were 101,000 miles. The discrepancy was largely among Western carriers. Time did not permit a reconciliation.



than three times the entire freight car ownership), a capacity for 29 thousand of the 31 thousand locomotives owned and an annual repair shop capacity for 792 thousand locomotives - equal to over 2 shoppings per month and annual car repair shop capacity for 8 million cars or 3 repairs per year.*

Highway

In the field study of terminal trucking operations it was found that the equipment used by the several operators differed widely. Tractor semitrailer operations predominated both in the number of companies using such equipment and the number of vehicles utilized. Medium-duty tractors, of 5 and 7 1/2 ton rating, are in service, as well as a few light-duty tractors of 1 1/2 ton rating. Except for one large operator using open rack bodies and tarpaulins, all bodies are fully enclosed, usually of medium-weight metal and wood construction, though some bodies were of heavier construction and a few light-weight all-metal bodies of recent design were observed. In only one operation are semitrailers equipped with demountable bodies. Body dimensions range in width and height from 6 feet to 7 1/2 feet and in length from 14 to 20 feet. A shuttle service is most frequently used, the number of semitrailers per tractor varying from two to five, three being the usual number. In several operations a single-unit tractor semitrailer combination is used in lieu of a truck. Compared with a burden-carrying truck capable of doing the same work, such a combination requires less investment in motive power, can be manipulated more readily in congested spaces, uses less garage space (the semitrailer generally being parked outside), and usually has a lower operating cost and is subject to lower license fees. With a single unit tractor semitrailer in service it is possible to install at relatively low cost additional semitrailers thereby creating a shuttle movement. This results in more intensive use of the tractor and driver by reducing the dead time at both ends of the run due to loading and unloading of goods. Inasmuch as a tractor with driver costs from 4 to 6 cents per minute it is important to keep the unit at work producing transportation. By contrast, a semitrailer costs about one quarter of one cent per minute. The flexibility inherent in an operation using tractors and multiple unit semitrailers makes possible more effective control and greater operating efficiency than can be obtained with a single unit vehicle equipped with fixed body. This of course means lower operating costs. When the freight-carrying body is made demountable from the semitrailer a further degree of flexibility is introduced with still lower operating costs made possible and the way is opened to coordinated movement of goods by all types of transportation agencies.

* Analyses 105.1 to 105.5, inclusive.

Trucks equipped with demountable bodies which can be transferred between truck chassis and another vehicle or a platform quickly and inexpensively, offer a service comparable in flexibility and at probably lower cost than tractors hauling multiple semitrailers with fixed bodies. In making this comparison it is assumed that the freight is transferred from the highway vehicle body to some other conveyance before further transportation takes place. Such rehandling of freight is not only wasteful and unnecessary, but it is slow and costly. If only the demountable body is transferred from one transportation medium to another and the freight kept intact from origin to destination, the total cost of transportation is considerably reduced. However, from the highway standpoint only the equipment used and work done can be compared. Thus the most flexible and efficient operation results from the use of tractors and semitrailers equipped with demountable bodies rather than from the use of trucks so equipped.

In the operations which were studied trucks with fixed bodies are used in the fewest number of instances. Heavy-duty trucks predominate, the average age being at least six years. Thus this equipment was purchased prior to the intensive development of tractor semitrailer equipment, and as a heavy-duty truck represents a relatively large capital expense it cannot be written off or replaced during depressed conditions, particularly when the truck is far from being worn out. Such truck equipment is used in hauling heavy freight in large units short distances - for example, rolls of newsprint or baled rags. The freight is quickly removed from the truck and with a short run of less than 1 1/2 miles it is soon ready for another load. Even so the dead time of the vehicle may easily amount to half of the working day. Medium and heavy-duty trucks are also used on long runs (15 to 20 miles) discharging all or part of the load at the first destination, perhaps taking on an additional few tons, and so making a day's run of 50 to 60 miles with a heavy average load. In such service the truck is efficiently employed, but if present day equipment should be purchased the same work could be done at less expense with a tractor and semitrailer.

In general, it was observed that very little new equipment is in use in terminal truck service and though most of the equipment is well maintained much of it is obsolete and subject to high direct operating costs. The average age is at least six or seven years, the oldest equipment consisting of heavy-duty trucks, some of which are seventeen years old and still in first class mechanical condition. In the next age group come heavy-duty tractors, semitrailers and medium-duty trucks, while the newest equipment ranging in age from one to four years consists of medium and light-duty tractors and semitrailers. Much of the older equipment has solid tires though some changeovers to pneumatics have been made. All of



the newer vehicles have full pneumatic tire equipment and there is no doubt that such tires result in improved operation and lower expense.

## 106. Terminal Costs

Railway

Terminal costs are 68 percent of the total yard costs.* The average cost of originating and terminating (both handlings) a car of freight was $26.84, $13.42 each handling.# Assuming that house track cars were all exclusively l.c.l. cars (and that all other track cars were other than l.c.l.), the average terminal cost per ton originated was $1.13.# The average cost (one handling) of a single carrier industry track, origination or termination, was $11.41. Team track were slightly less than industry track deliveries, and house track (due to l.c.l. station handling) slightly more.ø Industry track multiple carrier (reciprocally switched cars) deliveries, averaging $26.98, were consistently about twice the cost of single carrier service.ø The weighted average costs of all cars is affected by the volume of reciprocal switching, which is done at various cities, due to wide difference between the cost of single and multiple carrier services at all cities./

Of the foregoing costs, station cost for team track and industry track cars averaged about $1 per car. For house track cars, however, it averaged $6.65 per car, due of course to the handling of l.c.l. traffic.**

The cost of individual terminal districts are shown in analyses 106.5 to 106.7, inclusive. The average switch engine minutes per car used in computing synthetic engine hours in making distribution between classes of tracks is shown in analysis 106.10.

Of the total terminal cars, 32 percent originated or terminated on house tracks, 10 percent on team tracks, and 58 percent on industry tracks. About 2 percent of the house track cars, 3 percent of the team track cars, and 16 percent of the industry track cars are "reciprocally switched", or multiple carrier cars, those switched to or from the origin or destination track by a switching carrier, other than the road-haul carrier.## The average cost of a single termination

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* Analyses 104.1 and 106.1. # Analysis 106.1.
ø Analysis 106.5.
/ Analysis 106.4 et seq. costs shown would be reduced about 2 1/2 percent by application of modified per diem basis of apportioning car maintenance expense described in section 68 supra.
** Analysis 106.5. ## Analysis 105.4.

of all cars is $13.42 per car. The cost of service to or from house tracks is single carrier, $12.62, reciprocally switched, $21.28; to or from team tracks, single carrier, $10.63, reciprocally switched $27.72; to or from industry tracks, single carrier, $11.41, reciprocally switched $26.98.*

Breaking the industry track cost into its component elements, we find the single carrier functions which account for the total cost of one termination, amounting to $11.41 to be as follows: Overhead $2.10; roadway 46 cents; power 60 cents; car $4.24; switching $3.16; station 73 cents; and marine 12 cents.# The multiple carrier industry track car involves a total cost of $23.91 made up of the following elements: Overhead $4.35; roadway 80 cents; power $1.19; car $9.90; switching $6.77; station 85 cents; and marine 15 cents.ø The direct expense, exclusive of overhead, in the case of single carrier service amounts to $9.31 per car, and in the case of reciprocally switched cars, to $19.56.#

It is to be noted that the cost of the reciprocally switched cars is uniformly more than twice the cost of the single carrier costs, measured by either full or direct cost.

Waterway

The total freight expenses of water carriers were also segregated on a service basis between terminal and line. All costs including maintenance, transportation, and overhead were allocated or apportioned to one of these two types of service. Total terminal costs were then broken down between station service and delivery service, the former including such expenses as billing, cashiers, clerks, checking, stevedoring and watching, and the latter such items as lighterage, vessel operating shore expenses, and others.

Total terminal expenses for all reporting carriers for the year 1932 amounted to $28,317,000 or 22 percent of total freight expenditures. Common carriers terminal expenses were $26,238,000 or 24 percent of their total freight expenses, and for other carriers these figures were $2,079,000 or 9 percent./

By district and by classes of carriers, the amount of terminal expense incurred in 1932 and the percentages of total freight expenditures were - Atlantic Coast common $7,670,000 or 33 percent, others $411,000 or 10 percent; Atlantic Gulf common $3,342,000 or 22 percent, others $6,000 or .6 percent; Intercoastal common $8,228,000 or 19 percent, others $85,000 or 27 percent; Inland Waterways common $2,984,000 or 37 percent, others $27,000 or 6 percent; Great Lakes common $1,656,000

* Analysis 106.5.
ø Analysis 106.9.
# Analysis 106.8.
/ Analysis 106.1.



or 20 percent, others $1,442,000 or 10 percent; and Pacific Coast common $2,360,000 or 19 percent, others $109,000 or 14 percent.*

Terminal station expense for all reporting carriers for the year 1932 amounted to $18,432,000 or 14 percent of total freight expenditures and 65 percent of total terminal expenses. For common carriers, similar figures were $16,878,000 or 15 percent and 64 percent, and for other carriers, they were $1,554,000 or 7 percent and 75 percent.*

For common carriers and for other carriers by districts, the amounts of terminal station expenses and the percentages of total freight expenses and total terminal expenses for the year 1932 were - Atlantic Coast common $3,948,000 or 17 percent and 51 percent, others $51,000 or 1 percent and 12 percent; Atlantic Gulf common $1,986,000 or 13 percent and 59 percent; Intercoastal common $5,997,000 or 14 percent and 73 percent; others $63,000 or 20 percent and 75 percent; Inland Waterways common $2,028,000 or 25 percent and 68 percent, others $10,000 or 2 percent and 37 percent; Great Lakes common $1,204,000 or 14 percent and 73 percent, others $1,321,000 or 9 percent and 92 percent; and Pacific Coast common $1,714,000 or 14 percent and 73 percent, others $109,000 or 14 percent and 100 percent.*

Terminal delivery expenses for all reporting carriers, in 1932, amounted to $9,886,000 or 8 percent of total freight expenditures and 35 percent of total terminal expenses. For common carriers similar figures for terminal delivery expenses were $9,360,000 or 9 percent and 36 percent, and for other carriers they were $525,000 or 2 percent and 25 percent.*

By districts and by classes of carriers terminal delivery expenses for 1932 and percentages of total freight expenses and total terminal expenses were - Atlantic Coast common $3,721,000 or 16 percent and 49 percent, others $360,000 or 8 percent and 88 percent; Atlantic Gulf common $1,355,000 or 9 percent and 41 percent, others $6,000 or .6 percent and 100 percent; Intercoastal common $2,230,000 or 5 percent and 27 percent, others $22,000 or 7 percent and 26 percent; Inland Waterways common $955,000 or 12 percent and 32 percent, others $17,000 or 4 percent and 63 percent; Great Lakes common $452,000 or 5 percent and 27 percent, others $121,000 or .8 percent and 8 percent; and Pacific Coast common $646,000 or 5 percent and 27 percent.*

* Analysis 106.2.

Petroleum

The total terminal costs of pipe line transportation in 1932 amounted to 34 1/2 million dollars. This was equivalent to a ratio of 16 percent of the total revenue earned, $373 per route mile, 37 cents per net ton originated, and 1.1 mills per net ton mile.*

Of the total terminal expenses, station expenses absorbed 7 million dollars. This was equivalent to 3 percent of the revenue earned. It was equivalent to $78 per route mile, 8 cents per net ton originated, and .2 mill per net ton mile transported.*

The rest of the terminal expenses of pipe lines is represented by delivery costs which, in 1932, aggregated over 27 million dollars. This represented 13 percent of the revenue earned. It was equivalent to $295 per route mile of pipe line operated, to 29 cents per net ton and .9 mill per ton mile.*

Highway

An indication of the comparative cost of different terminal operations as well as the general range of trucking costs, and variable and fixed expenses incurred by different operators using heavy, medium, and light-duty tractors and trucks, is shown in the tabulation in Analysis 106.12.

Direct comparison of the several operations is not possible, due to variations in the average daily mileage traveled, differences in age of vehicles, kind of loads carried, depreciation policy of the different operators, variations in wage scales, kind and amount of supervision required and charged against the trucking operations, and so on. For each type of vehicle the highest operating expense occurs in New York, decreasing as one goes westward, being lowest in the smallest cities. Each operation and each class of expense which is abnormally high or low can be explained. However, if the few operations which fall in this category be eliminated it will be observed that the total expense per 8-hour day of operating vehicles in terminal areas does not vary greatly, ranging between $15 and $22 for medium and heavy-duty vehicles.

While the daily operating expense of tractors and trailers is about the same as trucks, it will be noted that the vehicle "variable" expense, which increases directly with mileage in general is much higher for the tractors than for the trucks. Thus the tractors cover a greater daily mileage, hauling more loads, with a consequent reduction in the expense per load and per ton of freight transported. Inasmuch as "wages" and "fixed" expense do not vary with the amount of work done, and as the increase in vehicle "variable" expense due to additional mileage is very small it is important to get as much transportation work as possible out of each vehicle.

* Analysis 106.1.



The amount of work done by different combinations of vehicles can be evaluated providing a record is kept of the number of loaded and empty trips, with the distance traveled and time consumed in making each trip. In this terminal study, which comprised the largest operations in the United States, it was surprising to learn that in general such records are not kept in workable form and some operators who do keep such records pay little attention to them. A central dispatching system is essential to an efficient trucking operation and each large operator has his own system, but without a record of the actual movements of each vehicle each day, summarized in easily readable form, it is difficult to improve the dispatching. In many cases it is the practice to have the vehicle driver keep a daily record of his movements showing the approximate time required for each movement, but with his total working time carefully calculated. The driver's card often is used in making up the payroll but rarely for checking up on vehicle performance. In place of this system it is advocated that the dispatching office keep the record of each driver's movements, the driver being required to telephone the dispatcher as soon as each destination is reached, the dispatcher then giving instructions for the next move and recording this information while he talks with the driver. The day's work of each vehicle is then easily summarized and the cost of handling any load of freight can be quickly and accurately determined, entirely aside from the effective control and administration over all vehicle operations which this plan makes possible. Such a system need not be at all expensive, a single dispatcher being able to control and record all movements for a large fleet of vehicles.

A condensed summary of vehicle performance over varying lengths of time and for different numbers of vehicles, but reduced to an 8-hour working day basis per vehicle, is also shown in analysis 106.12. It was not possible to obtain information from the other operations which were studied. In the table there is shown only one truck operation and one operation in which a tractor semitrailer combination is used instead of a truck. All other operators using trucks failed to keep performance records, the usual average performance that such operators expected to get from trucks being four loaded trips per day.

Certain statistics in the table show the comparative efficiency of the several operators. The information is arranged on the basis of the number of loaded trips per day, some operators using tractor semitrailer shuttle systems obtaining three times as many loads per day as those using trucks. However, there is a great variation in the amount of useful work done by the nine shuttle operators which is best shown by the ratio of loaded trips to total trips and loaded miles to total miles. When these ratios fall below 50 an

explanation is in order. Likewise, if the ratios equal 60, with 10 or more trips and 40 or more miles per day, an efficient operation is assured. On this basis very few present day terminal trucking operations can be considered efficient.

In the following estimates of the operating cost of a tractor-semitrailer combination in container movement (analysis 106.13) certain adjustments were made to meet these departures from the average. Generally they take the form of reduced expenses resulting from the magnitude of the anticipated operation and the estimated saving in the quantity purchases made possible; but they are also reflected importantly in the reduced annual variable expense resulting from the lower than average vehicle mileage per year.

The following assumptions were made as to vehicle and load:

| | |
|---|---|
| Maximum pay-load | 25,000 lbs. |
| Average load when loaded | 18,125 lbs. |
| Loaded mileage | 60 percent of total |
| Average load throughout mileage | 10,875 lbs. |
| Tare weight, container | 3,500 lbs. |
| Tare weight, vehicle | 13,475 lbs. |
| Average gross weight throughout mileage | 27,850 lbs. |

Gasoline and lubricating oil consumption was computed from the gross weight equations for each. The resulting 3.2 miles per gallon of gasoline and 33.1 miles per quart of oil may be adjusted by a 25 percent increase and decrease in estimating high or low consumption. A much wider range of departure from the average occurs in actual operator experience, but it is believed that such factors as improper handling of the vehicle, inadequate maintenance, faulty carburetor adjustment and other controllable factors appearing in many small operations need not be regarded in the estimate under consideration.

Gasoline at ten cents a gallon and oil at ten cents a quart, omitting the tax on each, appears to be currently available to large operations. These prices are applied to the consumption estimates above in order to arrive at the estimated cost.



Though a range in price may be anticipated between sections of the country, it is believed that the range in consumption would absorb such price range. Minimum prices cannot with assurance be applied to minimum consumption and vice versa.

Tires and Tubes. 9.75x20, 12 ply, tire prices as suggested by manufacturers, for large scale tire consumption, were assigned an average life of 25,000 miles, with high and low cost expectancies based on 20,000 and 30,000 miles respectively.

Garage Miscellaneous Expense. This item represents both labor and material costs. Labor elements would scarcely deviate from normal averages, and though fleet conditions would justify a price reduction in materials, it is quite likely that the particular operation in view would offset such a reduction by an increase in materials used. Average costs were, therefore, employed in the estimate.

Maintenance. Of the values resulting from the equation for maintenance cost, 1.16 cents per mile represents labor involved. This was retained while a 25 percent price reduction was allowed on the remaining materials costs. The resulting 3.14 cents per mile average was further corrected for high and low costs by a 25 percent deviation allowance. Such deviations are consistent with those of gasoline and oil consumption.

Vehicle Depreciation. Under normal conditions the useful life of a tractor and semitrailer of the type under consideration would average 150,000 miles for the tractor, and 250,000 miles for the semitrailer. Depreciation rates should, as a rule, vary inversely with the investment. But the costs of actual depreciation, plus maintenance, are likely to more than offset the initial investment savings where the equipment is too light, while the costs of obsolescence are likely to more than offset maintenance and depreciation savings where the equipment is too sturdy. When the vehicles average less than 60 miles of daily travel, the element of obsolescence assumes greater importance than physical deterioration and depreciation should be charged on a time basis. Seven years for the tractor applied to a price range of $4,000 to $5,000 for low and high values and to $4,500 for an average, and 15 years for the semitrailer applied to $600 and $700 for low and high and to $650 for average values, are conservative. The investment figures represent the reduced prices of quantity purchase. They represent the purchase price less tire price.

Vehicle Insurance. The following estimates, based on operator experience as well as normal rate ranges were employed in the computation of insurance cost expectancies:

| Item | Minimum | Maximum |
|---|---|---|
| Public liability, tractor | $150.00 | $250.00 |
| Public liability, semitrailer | 50.00 | 90.00 |
| Property damage | 75.00 | 150.00 |
| Fire tractor | 30.00 | 60.00 |
| Fire semitrailer | 5.00 | 10.00 |
| Cargo | 15.00 | 65.00 |
| Total | $325.00 | $625.00 |
| Less 25 percent for fleet, 8.33 percent for experience | $216.67 | $416.67 |
| Estimated Range | $225.00 | $425.00 |
| Estimated Average | $325.00 | |

Drivers' and Helpers' Wages. Drivers' and helpers' wages, like vehicle depreciation, though normally calculable on a mileage basis, should in the low mileages under consideration be estimated on a time basis. Drivers' wages will range between $20.00 and $30.00 weekly and will average close to $25.00. Helpers' wages will vary between $14.00 and $22.00 weekly and may average $18.00. The costs of the latter were computed at one helper to every four vehicles. Employee liability insurance is assumed to be included in the estimate.

Garage Rent. Average garage rental was assumed; but a 20 percent plus and minus deviation was allowed in computation of high and low probabilities.

General Overhead and Miscellaneous. The general overhead costs not allocable to the foregoing items, will depend largely on the specific nature of the organization operating the proposed service. A reasonable allowance, slightly higher than normal operator experience, would seem to be in the neighborhood of $1,500 per vehicle as an average. A 20 percent deviation was again allowed for high and low probabilities.

Variable Fees. Because for-hire operations use the public highway or street as a place of business there is usually imposed upon them a special tax which in some way is dependent on the extent of use and will therefore vary with mileage. Added to this will be the gas tax which will range between three cents and nine cents per gallon (Federal tax included), and the Federal oil tax of one cent per quart. The normal sum of these variable tax items for an operation of this character will be in the vicinity of 2.75 cents per mile, and though a deviation of 50 percent would not be abnormal, it may be assumed that high tax regions would enjoy low labor and rental costs, and in making the estimates here this complication is avoided by merely allowing a 25 percent deviation from the average.



Licenses and Taxes, Not Variable. The heaviest part of the tax bill, under the assumed mileages, will be in the form of taxes and fees on the vehicles which are independent of mileage. For the particular vehicle combination in question $250 would appear to be representative, with a reasonable deviation allowance of 25 percent. Taxes on other property, etc., are chargeable to the particular accounts involved and do not appear in these vehicle tax estimates.

## XXVIII LINE OPERATIONS

### 107. Elements of Line Operations

Railway — Rail line activities embrace the movement of the car between terminals and the yard handlings en route at intermediate terminals. The cost of these activities include the cost of maintaining the roadway and power employed in, as well as the movement incident to both activities, together with a proportionate share of the overhead costs. No attempt was made to distribute the cost of yardings between kinds of trains. The road expense could be and was so separated. On the whole, line expense constituted 63 percent of the total cost* and 49 percent of total revenues.# The average unit line cost per train was $232; per train hour, $51; per train mile, $3.16; per car mile, 12 cents.#

Petroleum — The total line expenses of petroleum pipe line transportation companies in 1932 amounted to 67 million dollars, all of which were allocated to conveyance costs. This is equivalent to 32 percent of the total revenue earned; and amounted to $724 per route mile of pipe line operated, 81 cents per net ton originated and 2.1 mills per net ton mile.#

### 108. Utilization of Line

Railway — Statistics of the composite train are shown in analyses 70.3 and 70.6. From these statistics it appears that (1) the average train run was 75 miles in 4 1/2 hours, a road speed of 16 miles per hour; (2) the average number of train miles per mile of road was 1,611 per annum or 4.4 trains per day, (2.2 trains each way)ø which means that over the

* Analysis 107.2.
\# Analysis 107.1.
ø If the main track miles, 284 thousand (analysis 70.4) are used instead of miles of road, the trains per day per mile of main track drop to 3.8.

country as a whole, the headway of freight trains running in the same direction averaged about 11 hours or 176 miles; (3) the heaviest train mile density was in the Pennsylvania operating district - 4 trains each way per day and the lightest in the Oregon district - 1 train each way per day.

The foregoing statistics, however, deal with both main and branch line. If the branch line be omitted, the average run becomes 84 miles in 5 hours or 16.8 miles per hour; the train miles per mile of road, 2,070; and the trains, not quite 3 trains per day each way. The Pennsylvania district main lines (the heaviest in density) averaged 6 1/2 trains each way per day, a headway of 3 hours and 50 minutes, or 56 miles.*

The average number of loaded car miles per manifest train mile was 40; the gross load, (car tons only) 2,123 tons; the net load, 752 tons. The heaviest trains were in the Virginia (45 cars, 3,095 gross tons and 1,375 net tons) and New York districts (58 cars, 2,824 gross tons and 1,048 net tons.)#

The average drag freight train consisted of 26 loaded cars, 2,101 gross tons (car tons only) and 794 net tons. The heaviest trains were in West Virginia - 43 cars, 4,359 gross tons, and 2,244 net tons.#

## 109. Intermediate Yardings

Railway

Line intermediate yardings are of two kinds - reclassification, servicing or transfer between yards or between road trains of the same carrier (single carrier yardings), or the interchange between carriers, including intermediate switching where more than one interchange is involved. The number of such handlings is quite large, aggregating 105 million in 1932,ø which means that on the average each car was yarded 6 times/ in the average (car/) haul of 353 miles, or once every 70 miles. The costs do not vary greatly between territories. The average unit cost for yarding for the United States was $3.23 for all classes; $2.41 for a single carrier yarding; $4.80 for a single interchange; and $4.88 for an intermediate handling.ø

* Exhibit 440. # Analysis 108.2.
ø Analysis 109.1.
/ This includes one origin and one destination yarding and an average of four intermediate yardings.



## 110. Conveyance

Railway

The road cost of operating the composite train was $164; $36 per hour; $2.24 per train mile; 8 1/2 cents per car mile; 1.2 mills per gross ton mile; 1.9 mills per equated ton mile; and 3.7 mills per net ton mile.* Of the total trains operated in 1932, 25 percent were manifest trains, 25 percent drag trains, 27 percent main line way trains, and 23 percent branch line way trains.#

The reported cost of train movement per loaded car mile was not resolved into primary elements. This can be done, however, by application of the statistics of the Commission for 1932 as follows: Wages (41 percent) 1.70 cents; fuel, power, lubricants, engine supplies (29 percent) 1.20 cents; engine house (6 percent .25 cents; train supplies (7 percent) .28 cents; dispatching and road service (8 percent) .33 cents; and supervision (9 percent) .37 cents.ø

Comparison indicates that from the standpoint of efficiency there is little choice between manifest and drag trains. In nearly every case the manifest train appears to be operated as the efficiency road unit by choice. The tonnage is kept up to the locomotive rating and a high percentage of cars are loaded. If the volume of "red ball" freight does not fill out the train, then tonnage of heavier commodities is used to fill in. This tonnage would ordinarily move in drag trains when traffic is heavy. Manifest trains seem to have replaced drag trains in many cases due to the fact that the schedule has to be maintained for time freight and that the drag tonnage used to fill in leaves little left for the drag movement.

Drag trains seem to have changed in character in that, with the exception of coal movement, they are now largely lightly loaded trains carrying most of the empty cars on the main line. Drag trains also are performing some local service which is not heavy movement.

Where drag tonnage is high, it is almost always a one direction movement and the return of empties cuts down the average loaded cars per train. This is not true of the manifest one-way movements, since the return of the empties from manifest is classed as drag service and only helps to lessen the number of loaded drag cars.

* Analysis 107.1. # Analysis 108.3
ø Analysis 108.7. The total cost of train movement 3.32 cents has been expanded to 4.13 cents by dividing by the ratio of overhead expense (1.71 cents) total expense 8.69 cents.

The present interchangeability of road freight power is possibly due to the fact that gross tons are about equal between drag and manifest. It is then efficient practice to move the "light" cars in drag service and speed up tonnage deliveries by putting the heavy shipments in faster scheduled trains.

The average number of loaded cars in manifest trains was 40, in drag trains 26, and in main line way trains 12.* Empty cars in manifest trains averaged 31, in drag trains 26, and in main line way trains 12. Gross weight in the average manifest train was 2,123 tons, in the drag train 2,101, and in the main line way train 829; the net weight in the manifest train was 752, drag train 794, and way train 291.* The average run of the manifest train was 115 miles in 5 2/5 hours - a speed of 21 miles per hour; of the drag train 84 miles in 5 hours - a speed of 17 miles per hour; and of the way train 56 miles in 5 hours - a road speed of 12 miles per hour.# The average cost of the manifest train was $281; of the drag train $210. The average train mile road cost of the manifest train was $2.51, of the drag train $2.55, and of the main line way train $2.01. Per loaded car mile, the manifest train cost 6 cents, the drag train 10 cents and the way train 17 cents. Per net ton mile, the manifest train road cost was 3.3 mills, the drag train 3.2 mills and the way train 6.9 mills.ø

Road cost did not vary widely in different territories. The average cost per train mile (all trains) for the United States was $2.29. The territories where train mile costs were highest were Trunk Line and New England, about $3; the lowest costs were in the South, Western Trunk Line and Southwestern Territories, about $2.ƒ

The loaded car mile cost for the United States was 8.7 cents. The highest cost was in New England, 10.7 cents; the lowest in Central Territory, 7.7 cents. With the exception of the Pacific Northwest (9.2 cents) the costs in all other territories were within 5 percent of the average cost.ƒ The average gross ton mile cost (all trains) was 1.2 mills. The extreme variations were Pocahontas, 1 mill; and the New England 1.7 mills. None of the other territories varied from the average by as much as 10 percent. Due to differences in traffic handled, the variations in cost per net ton mile were marked. The average (all trains) was 3.8 mills. The cost in the several territories was as follows: New England, 6.1 mills; Trunk Line, 3.6 mills; Central, 3.2 mills; Pocahontas, 2.2 mills; Southeastern, 4.1 mills; Western Trunk Line, 4.4 mills; Southwestern, 4.6 mills; Pacific Northwest, 4.7 mills; and Pacific Southwest, 5.3 mills.ƒ

* Analyses 108.2 and 111.3.
\# Time of train switching eliminated. Exhibit 440.
ø Analyses 110.3, 110.4, 111.1 and exhibit 440.
ƒ Analysis 110.1.



The gross ton mile cost of manifest train service was lower than any other type of train service for the United States as a whole in all rate territories except Central and Southeastern, where the drag train cost was about 6 percent lower than manifest trains. The national average net ton mile cost of drag train service was lower than any other type of train. In three districts, Central, Pocahontas and Southeastern (due partly, it is assumed, to preponderance of coal traffic with consequent heavier car loading) the drag train costs per net ton mile were lower. In all other territories, however, it was higher, due in part to the practice of handling empty equipment in drag trains in the Western District.*

Waterway

Water carriers' line costs were divided between line station and line conveyance. Total line costs for all reporting carriers for 1932 amounted to $103,152,000 which was 78 percent of total freight expenditures. Common carriers total line expenses were $83,302,000 or 76 percent of their total freight expenditures, and other carriers spent $19,850,000 or 91 percent of their total freight expenses for line costs.#

By districts and by classes of carrier line expenditures and percentages of total freight expenses for 1932 were - Atlantic Coast common $15,708,000 or 67 percent, others $3,885,000 or 90 percent; Atlantic Gulf common $11,832,000 or 78 percent, others $989,000 or 99 percent; Intercoastal common $34,029,000 or 81 percent, others $233,000 or 73 percent; Inland Waterways common $5,159,000 or 63 percent, others $446,000 or 94 percent; Great Lakes common $6,675,000 or 80 percent, others $13,639,000 or 90 percent; and Pacific Coast common $9,898,000 or 81 percent; others $658,000 or 86 percent.#

Line station expenses for all reporting carriers for 1932 amounted to $2,516,000 or 1.9 percent of total freight expenditures and 2.4 percent of total line expenses. Common carriers spent $2,383,000 or 2.2 percent of their total freight and 2.9 percent of their total line expenditures for line station items, and for other carriers similar figures were $133,000 or .6 percent and .7 percent.#

Line station expenses for 1932 by districts and by classes of carriers and percentages of total freight expenditures and total line expenses were - Atlantic Coast common $351,000 or 1.5 percent and 2.2 percent, others $80,000 or 1.9 percent and 2.1 percent; Atlantic Gulf common $1,002,000 or 6.6 percent and 8.5 percent; Intercoastal common $462,000 or 1.1 percent and 1.4 percent, others $26,000 or 8.2 percent and 11.2 percent; Inland Waterways common $223,000 or 2.7 percent and 4.3 percent, others $1,000 or .2 percent and .2 percent; Great Lakes common $143,000 or 1.7 percent and 2.1 percent, others $26,000 or .2 percent and .2 percent; and Pacific Coast common $202,000 or 1.6 percent and 2 percent.#

* Analyses 110.3 and 110.4. # Analysis 107.3.

Line conveyance expenses for all reporting water carriers in 1932 amounted to $100,636,000 or 77 percent of their total freight expenditures and 98 percent of their total line expenses. For common carriers similar figures were $80,920,000 or 74 percent and 97 percent, and for other carriers they were $19,716,000 or 90 percent and 99 percent.*

By districts and by classes of carriers, line conveyance expenses and percentages of total freight expenditures and total line expenses, respectively, for the year 1932 were - Atlantic Coast common $15,357,000 or 66 percent and 98 percent, others $3,805,000 or 89 percent and 98 percent; Atlantic Gulf common $10,831,000 or 71 percent and 92 percent, others $989,000 or 99 percent and 100 percent; Intercoastal common $33,567,000 or 79 percent and 99 percent, others $207,000 or 65 percent and 89 percent; Inland Waterways common $4,936,000 or 61 percent and 96 percent, others $445,000 or 94 percent and 99 percent; Great Lakes common $6,532,000 or 78 percent and 98 percent, others $13,613,000 or 90 percent and 99 percent; and Pacific Coast common $9,697,000 or 79 percent and 98 percent, others $658,000 or 86 percent and 100 percent.*

## 111. Distribution Operations

Railway

Rail distribution service is defined in the survey as the service by way freight trains. These trains are of two classes, those operated on main lines and those operated on branch lines - the latter comprising lines over which only way freight train service is customarily operated.

Train analysis indicates that these trains carried (for relatively short distances) a substantial part of the total traffic. The branch line trains handled 300 million net tons, that is, they either originated, terminated or intermediately handled that amount. The extent of the duplication is unknown but in the nature of things is not believed to be large. The main line way trains handled 489 million net tons.# It would seem therefore that the composite railway ton was either originated or terminated by a way freight train, main or branch, inasmuch as the total rail tonnage originated amounted to 646 million tons.

The average haul on main line way trains was 56 miles$\phi$ and on branch lines, 37 miles.$\not$ The ton miles of the former amount to only 10 percent, and the latter, only 4 percent of the total net ton miles.**

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* Analysis 107.3.
$\phi$ Analyses 108.3 and 111.1 (train miles divided by trains).
$\not$ Analyses 108.3 and 111.2 (train miles divided by trains).
** Analyses 111.1, 111.2, 67.1.
\# Analyses 111.1 and 111.2.



Of the 243 thousand miles of road operated in 1932 by the reporting carriers, 76,000 or 31 percent were lines over which only local service, freight and passenger, was regularly operated which are denominated "branch lines."* The ratio of branch lines to total mileage is about the same as the national average in all territories, except Central, 15 percent; Pocahontas, 18 percent; Western Trunk Line, 40 percent; and Pacific Northwest 43 percent.# About 23 percent of the freight train runs were on branch lines.$\phi$ but only 12 percent of the train miles, 3 percent of the loaded car miles, and 4 percent of the net ton miles.$\not$

Mainline way freight trains accounted for 27 percent of all trains, 21 percent of all train miles,$\phi$ and 18 percent of total road costs. Branch line freight train costs were 9 percent of total road costs. The road cost was 63 cents per net ton handled in through trains for an average haul of 100 miles, road cost in way trains was 31 cents per net ton handled for an average haul of 47 miles.**

The composite main line way freight consisted of 13 loads and 12 empties. Its car tonnage was 829 tons, its net tonnage 291 tons.## Its average road cost per train mile was $2.02 per loaded car mile 17 cents, and per net ton mile, 7 mills.$\phi\phi$

The composite branch line had an average of 3/4 of a train each way per day. It consisted of 8 loads and 6 empties. Its car tonnage was slightly over 500 tons, its net load just under 200 tons. Its average run was only 37 miles, the running time of which was 3 hours// - a running speed of 12 miles per hour. The average road cost per train was $67; $1.82 per train mile; 24 cents per car mile; 3.6 mills per car ton mile; and 9.4 mills per net ton mile. It was the cheapest train but the most expensive service. The road cost in terms of revenue units (loaded cars or net ton miles) was nearly three times the road cost of the average mainline train. In one out of nine rate territories and in ten out of forty-eight operating districts, the average road cost per car mile was in excess of 30 cents and in a number of them in excess of 40 cents. The average way train, judged from test analyses, handled a preponderance of low grade traffic, the average consist being 4 percent cotton, hay and tobacco; 14 percent coal; 15 percent sand, stone and gravel; 6 percent petroleum; and 13 percent forest products. 18 percent were l.c.l. cars.**

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* Analysis 70.5.
$\phi$ Analysis-108.3.
** Exhibit 440.
$\phi\phi$ Analyses 111.1 and 111.4.
// Exclusive of train switching.
\# Analysis 70.5.
$\not$ Analyses 67.1 and 111.2.
## Analysis 111.3.

## XXIX INTEGRATED MOVEMENT

### 112. Problem of Integrated Movement

### 113. Instrument Utility

Railway

The rail cost of performing terminal service for average car amounts to $26.84 in the origin and destination terminals* and $12.49 in the intermediate terminals - a total of $39.33 per car or $1.65 per ton,#· and if intermediate yardings be excluded, $1.13 per ton.*

The rail cost of line movement, excluding intermediate yardings, but including the cost of all functions, is 9 cents per loaded car mile or 4 mills per net ton mile. If intermediate yardings be included, the rail cost per car mile is 12 cents and per ton mile, 5 mills.ø

The cost of cargo train service can be approximated. The total present main line road cost of 3.6 mills per net ton mile/ understates the cost to the extent that expenses common to road and yard cannot be reduced proportionately to the reduction in the amount of yard operations but overstates it in that this cost relates to an average train load of only 660 net tons,** whereas the train load of a cargo train might well be four or five times that much.

In the Pocahontas region as a whole and on individual railways or parts of railways in other sections, the potentialities of cargo trains have been realized more nearly than generally is true in operations as a whole. The net tons per train mile in Pocahontas Territory were over twice the average of the country as a whole and in drag freight trains the ratio was nearly three times that for the country.## Taking operations as a whole, the Pocahontas conveyance cost per net ton mile was 2.2 mills, the intermediate yardings .7 mill and station .1 mill, a total of 3 mills, whereas the average cost for the country as a whole was 5.3 mills or over 50 percent greater.øø The drag freight train in the Pocahontas region was still lower, its road conveyance cost being 1.9 mills per net ton mile compared with the national average of 3.2 mills.// The data indicate that a full tonnage cargo train moving from a single origin track to a single destination industry track without breaking the train line would do so at a line cost of less than 2 mills per net ton mile, or below the average cost of pipe line transportation. This train also would eliminate practically all terminal operations and expense. While the cost of this character of rail operation is higher than the cost of cargo water carriers, it is lower than any form of land transportation.

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* Analysis 106.4. # Analysis 104.1. ø Analysis 107.1.
/ Analysis 110.2.
** Exhibit 440 (net ton miles divided by train miles).
## Exhibit 440. øø Analysis 107.2. // Analysis 110.4.



Analyses 108.8 and 81.4 to 81.6 show the line cost per loaded car mile and per net ton mile of the four types of trains operated with that of power unit cars submitted by a number of leading manufacturers. These cars are motor units - Diesel-mechanical, Diesel-electric and steam types are each represented which are designed to carry 3 to 5 containers on the power car and to trail 1 to 4 trailers at a road speed of 50 miles per hour on level tangent track. All line costs were deemed constant to both types of operation except power maintenance, depreciation, locomotive care, fuel, water and similar supplies, and crew wages. The latter were calculated at $20 per crew day with an average mileage of 150 miles. This crew mileage is higher than that of present conventional freight trains but lower than justified by the type of operation, since on the average it would mean about 4 hours' work. A reasonable mileage would be about 250 miles or about 6 hours' work. In computing car mileage, 60 percent was deemed loaded and 40 percent empty and similar ratios were used in computing ton mileage.

The analysis also shows similar information with respect to light power locomotives for trains of from 4 to 12 cars. The submissions show, almost without exception, that the manufacturers claim to be ready to produce a type of light train which will offer a transportation service on carload freight at express train speed, without terminal delays and at a cost substantially less than the cost of conventional trains.*

Highway

Separating the overall cost of the integrated highway movement between line and terminal upon the basis of studies of truck terminal operations alone, reveals a truck terminal cost varying from 90 cents per ton with a 3-ton load to 28 cents per ton with a 20-ton load, the average (10-ton load) being 41 cents.# The foregoing costs are for fully loaded movements. If an average loaded movement of 60 percent be assumed, the average truck terminal cost rises from 41 cents to about 70 cents per ton, or nearly $1 per ton less than rail yard cost and 43 cents less than rail terminal cost.

The line cost of a fully loaded truck movement with an average load of 10 tons is about 27 mills per net ton mile and of the most economical load, 20 tons, about 18 mills per net ton mile.

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* The total cost per net ton mile produced by each of these submissions, except a more or less convential steam locomotive is less than the comparable cost of either type of way train since 12 submissions show average cost the same or lower than that of the average manifest or drag train, 16 lower than the average of all trains and only 6 equaling the average of all trains.
# Analysis 49.7.

If these two instrumentalities continue to be operated competitively with one another, allowing an average load of 10 tons per truck, and an average line cost of 5.3 mills per net ton mile by rail*, we find that the truck advantage of 43 cents per ton in the terminal will be overcome by rail superiority on the line in about 20 miles.

The cost of handling and rehandling can be eliminated either through the use of containers or by transporting semitrailers the whole distance from origin to destination by highway, water, rail, or any combination of these three, the container being the efficient medium for such coordinated transportation.

Such a plan would relieve the carload shipper of the necessity of making minimum carload weights, the containers recommended being 10 feet and 24 feet long, having a capacity of from one-fifth to one-half a carload, carrying a maximum payload of 25,000 pounds, in a body readily transferable between highway vehicles, shippers' platforms, railroad cars, and boats. Present highway equipment, trucks, trailers, and semitrailers, can be equipped for the container service at a cost of a few hundred dollars per vehicle, although specially designed semitrailers costing but little more than present vehicles would prove advantageous. The highway operator possesses the motive power and would be responsible for all transfers of containers between railroad cars and highway vehicles.

The ultimate traffic to be moved in terminal areas by highway vehicle would be carload freight. A terminal area may easily embrace a loaded haul of 25 miles although the average loaded haul would probably not exceed 4 miles in large terminals. In addition highway vehicles would have an active field of service replacing branch line haul of carload freight for distances up to 50 miles and in distributing carload freight in lieu of mainline trains for distances of 30 miles or more, in many sections of the United States. Stimulation of quantity movements of commodities which now do not move in commerce at all would likewise result, the highway vehicle operating in single units being easily capable of reaching farms and small communities which lack other transportation facilities. A comparison of highway container service with way train, main line and branch line service is shown in analyses 115.1 and 115.2, which give an idea of the extent of this field.

Trucks generally render a much speedier service in terminal areas than is possible by switching of cars. By substituting demountable container bodies for the present large capacity car bodies and letting highway vehicles do the complete terminal job, taking containers from the road train, making delivery, and returning empty containers to the road trains, coordination of railway and highway service is brought about, and the shipper gets

* Analysis 107.1.



not only the quantity of goods desired but speedy service as well. The railroad train has inherent advantages both in speed and economy over the highway vehicle for the line-haul movement, but the reverse is true in terminal movement. The increase in speed effected by using highway service for terminal collection and delivery of container load lots in lieu of present railroad carlot service is indicated in analysis 21.1. Under such an arrangement the highway vehicle and the railroad train become partners instead of competitors, the demountable container body, which travels with equal facility on either vehicle, being the key to the solution.

## XXX INTERCARRIER OPERATIONS

### 114. Necessity for Interchange

### 115. Routing Privileges

### 116. Cost of Intercarrier Operations

Shipper

The shippers also answered fully the question about nature and extent of the traffic service which they received. This information is shown in analyses 115.1 and 115.2. In the former the questions have been tallied by the percentage relationship of replies to the total number of shippers replying to the questionnaire; in the latter, in accordance with the number of tons by all agencies shipped by the respondents.

It appears that 26 percent of the shippers in number, representing 68 percent of the tonnage reported, obtained traffic service from their own traffic departments; 26 percent in number, representing 13 percent of the tonnage, from firm officers who performed other duties; 61 percent in number, representing 18 percent of the tonnage, did not have any traffic service but relied entirely on railway officers or agents.

With respect to solicitation, 57 percent of the shippers, representing 80 percent of the tonnage, were solicited by off line commercial agents; 36 percent of the number, representing 65 percent of the tonnage, reported that off line solicitation was helpful; 23 percent of the number, representing 42 percent of the tonnage, that such solicitation affected routing. Only 21 percent of the shippers in number, representing but 9 percent of the tonnage, thought off line solicitation was useless.

Off line solicitation evidently is not of great importance from a service standpoint. Of the total shippers, 11 percent in number, representing 26 percent of the tonnage, reported that they

obtained information about rates, classifications, etc., from off line officers; 17 percent in number, representing 36 percent of the tonnage, that they received from such officers information about schedules, service, etc.; 20 percent of the number, representing 43 percent of the tonnage, that they were helped in tracing shipments by off line agencies.

Twenty-two percent of the shippers in number, representing 27 percent of the tonnage, reported that routing was largely influenced by solicitation. Only 11 percent in both number and tonnage reported that routing was largely influenced by friendship; 11 percent in number, representing 32 percent of the tonnage, reported that it was necessary to control reconsignments; while 63 percent in number, representing 71 percent in tonnage, that it was used to compel good service. Only 17 percent in number, representing only 4 percent in tonnage, reported that the routing privilege was not of substantial value.

Railway

In 1932 there were 50 million interchange handlings* (2,600 thousand of which involved an intermediate switch line) at an average cost of $6.51 each#, producing a total cost of 325 million dollars. Reduced to an interchange basis, that is, counting as a single transaction all switching operations necessary to interchange a car from one road-haul carrier to another or between the road-haul carrier and the initial or final terminal switching lines, there were 24 million interchanges, entailing an average cost of $10.78 each. Confining the cost to the intercarrier cars alone (10,556 thousand) it averaged $30.80 per car originated.ø

The cost per interchange handling varied but little between the three districts but considerably between territories. The lowest cost was in New England, $4.10; the highest in the Pacific Northwest, $11.71. The lowest cost per car interchange was $7.04 in New England Territory; the highest $15.00 in Pacific Northwest Territory.

## 117. Minimization

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* Counting each handling by each carrier.

\# Analysis 116.3.

ø Total cars originated 27,147,000 (analysis 67.1), less local carloads 8,867,000 (exhibit 110) and local l.c.l. cars 7,724,000, leaves 10,556,000 intercarrier cars originated. Local l.c.l. cars were determined as follows: Total l.c.l. cars loaded on line 9,079,000 (exhibit 112D Section 1, Merchandise Traffic Report), less interline l.c.l. cars 1,355,000 (Note 224, page 14, Merchandise Traffic Report).

# Volume 3

FEDERAL COORDINATOR OF TRANSPORTATION

# FREIGHT TRAFFIC REPORT

STATISTICAL ANALYSES

VOLUME III

Section of Transportation Service

Business

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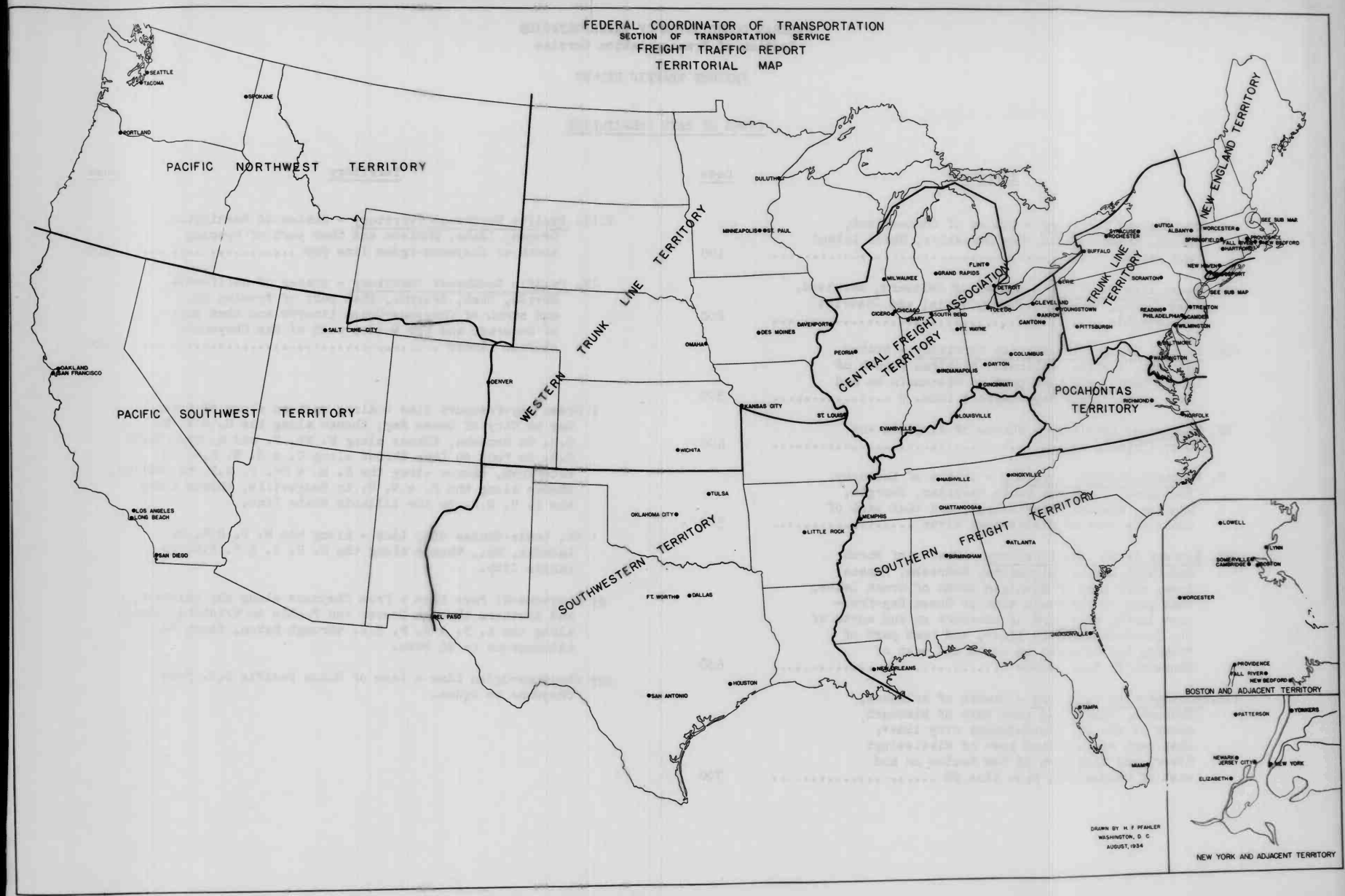

FEDERAL COORDINATOR OF TRANSPORTATION
SECTION OF TRANSPORTATION SERVICE
FREIGHT TRAFFIC REPORT
TERRITORIAL MAP
PACIFIC NORTHWEST TERRITORY
PACIFIC SOUTHWEST TERRITORY
WESTERN TRUNK LINE TERRITORY
CENTRAL FREIGHT ASSOCIATION TERRITORY
TRUNK LINE TERRITORY
NEW ENGLAND TERRITORY
POCAHONTAS TERRITORY
SOUTHWESTERN TERRITORY
SOUTHERN FREIGHT TERRITORY
SEATTLE
TACOMA
SPOKANE
PORTLAND
SALT LAKE CITY
OAKLAND
SAN FRANCISCO
LOS ANGELES
LONG BEACH
SAN DIEGO
DENVER
EL PASO
DULUTH
MINNEAPOLIS
ST. PAUL
OMAHA
DES MOINES
DAVENPORT
KANSAS CITY
ST. LOUIS
WICHITA
OKLAHOMA CITY
TULSA
FT. WORTH
DALLAS
HOUSTON
SAN ANTONIO
CHICAGO
CICERO
GARY
SOUTH BEND
PEORIA
MILWAUKEE
GRAND RAPIDS
FLINT
DETROIT
TOLEDO
CLEVELAND
YOUNGSTOWN
AKRON
CANTON
COLUMBUS
DAYTON
INDIANAPOLIS
CINCINNATI
EVANSVILLE
LOUISVILLE
NASHVILLE
KNOXVILLE
CHATTANOOGA
MEMPHIS
LITTLE ROCK
BIRMINGHAM
ATLANTA
NEW ORLEANS
JACKSONVILLE
TAMPA
MIAMI
BUFFALO
SYRACUSE
ROCHESTER
UTICA
ALBANY
SCRANTON
ERIE
PITTSBURGH
READING
PHILADELPHIA
CAMDEN
TRENTON
WILMINGTON
BALTIMORE
WASHINGTON
RICHMOND
NORFOLK
WORCESTER
SPRINGFIELD
HARTFORD
NEW HAVEN
BRIDGEPORT
SEE SUB MAP
PROVIDENCE
FALL RIVER
NEW BEDFORD
LOWELL
LYNN
SOMERVILLE
CAMBRIDGE
BOSTON
BOSTON AND ADJACENT TERRITORY
PATTERSON
YONKERS
NEWARK
JERSEY CITY
NEW YORK
ELIZABETH
NEW YORK AND ADJACENT TERRITORY
DRAWN BY H. F. PFAHLER
WASHINGTON, D. C.
AUGUST, 1934

FEDERAL COORDINATOR OF TRANSPORTATION
Section of Transportation Service

FREIGHT TRAFFIC REPORT

## CODES OF RATE TERRITORIES

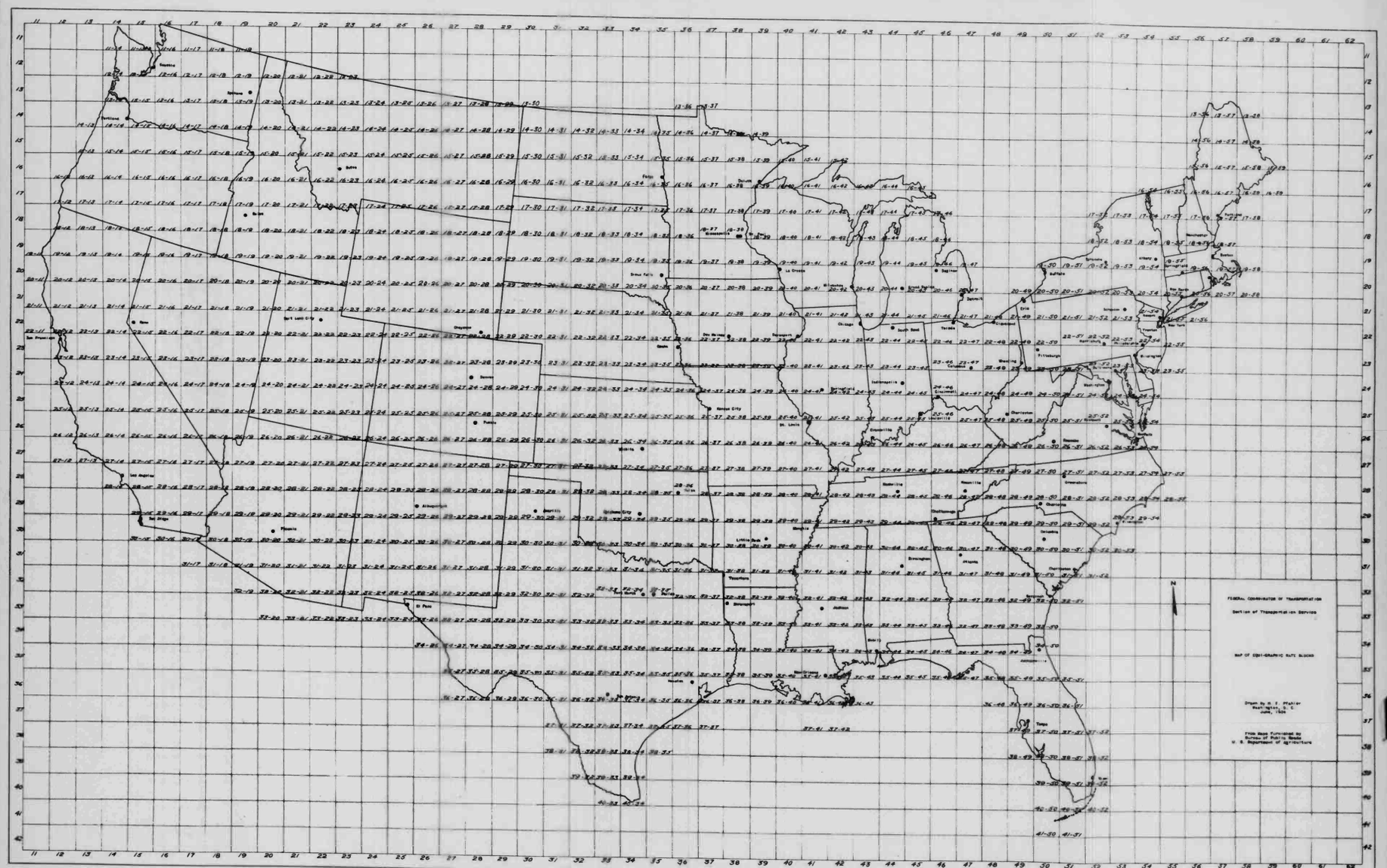
| Territory | Code |
|---|---|
| I. New England Territory - States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont | 100 |
| II. Trunk Line Territory - States of Delaware, Maryland, New Jersey, New York, Pennsylvania, and District of Columbia | 200 |
| III. Central Freight Association Territory - States of Ohio, Indiana, Illinois, Michigan (South of Great Lakes) and that part of Wisconsin on and east of the Green Bay-Freeport line. # | 300 |
| IV. Pocahontas Territory - States of Virginia and West Virginia | 400 |
| V. Southern Freight Territory - States of Kentucky, Tennessee, North and South Carolina, Georgia, Florida, Alabama, Mississippi, and that part of Louisiana east of Mississippi River | 500 |
| VI. Western Trunk Line Territory - States of North and South Dakota, Minnesota, Nebraska, Kansas, Iowa, that part of Michigan north of Great Lakes, that part of Wisconsin west of Green Bay-Freeport line#, that part of Missouri on and north of St. Louis-Kansas City line*, and that part of Wyoming and Colorado on south and east of Cheyenne-El Paso line## | 600 |
| VII. Southwestern Territory - States of Arkansas, Oklahoma, Texas, and that part of Missouri south of the St. Louis-Kansas City line*; that part of Louisiana west of Mississippi River, and that part of New Mexico on and east of Cheyenne-El Paso line ## | 700 |
| VIII. Pacific Northwest Territory - States of Washington, Oregon, Idaho, Montana and that part of Wyoming north of Cheyenne-Ogden line ### | 800 |
| IX. Pacific Southwest Territory - States of California, Nevada, Utah, Arizona, that part of Wyoming on and south of Cheyenne-Ogden line### and that part of Colorado and New Mexico west of the Cheyenne-El Paso line## | 900 |

# Green Bay-Freeport line - Along western shore of Green Bay to City of Green Bay, thence along the C. & N. W. R.R. to Menesha, thence along M. St. P. and S. Ste. Marie R.R. to Fond du Lac, thence along C. & N. W. R.R. to Watertown, thence along the C. M. & St. P. R.R. to Madison, thence along the C. & N. W. to Dodgeville, thence along the I. C. R.R. to the Illinois State Line.

* St. Louis-Kansas City Line - Along the M. P. R.R. to Labadie, Mo., thence along the C. R. I. & P. R.R. to Kansas City.

## Cheyenne-El Paso Line - From Cheyenne along the Colorado and Southern through Denver and Pueblo to Trinidad, thence along the A. T. & S. F. R.R. through Raton, Santa Fe, Albuquerque to El Paso.

### Cheyenne-Ogden Line - Line of Union Pacific R.R. from Cheyenne to Ogden.


FEDERAL COORDINATOR OF TRANSPORTATION
Section of Transportation Service
MAP OF SEMI-GRAPHIC RATE BLOCKS
Drawn by R. F. Stahler
Washington, D. C.
June, 1936
From Maps Furnished by
Bureau of Public Roads
U. S. Department of Agriculture
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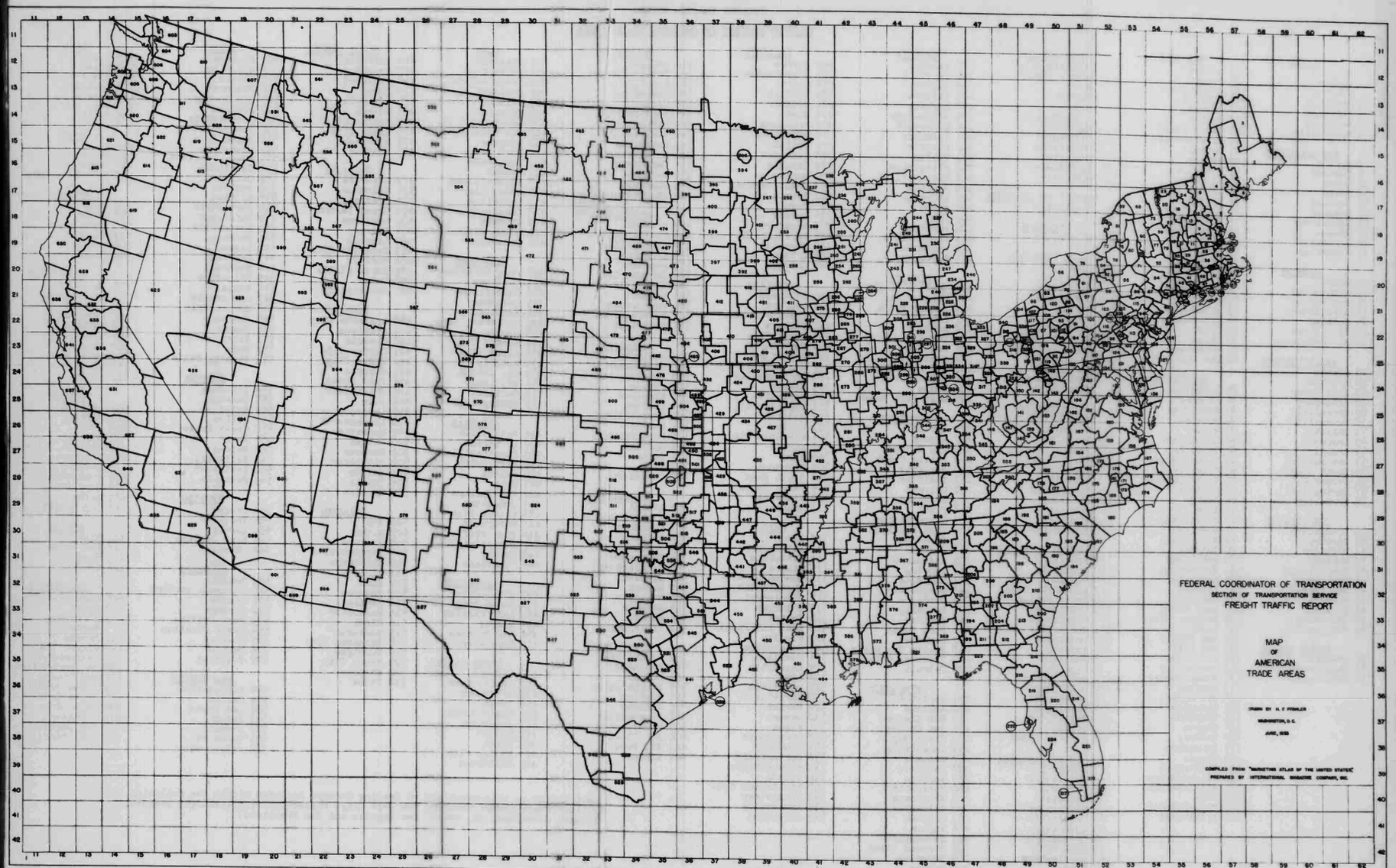
FEDERAL COORDINATOR OF TRANSPORTATION
SECTION OF TRANSPORTATION SERVICE
FREIGHT TRAFFIC REPORT
MAP
OF
AMERICAN
TRADE AREAS
DRAWN BY H. F. FRIMLER
WASHINGTON, D. C.
JUNE, 1935
COMPILED FROM "MARKETING ATLAS OF THE UNITED STATES"
PREPARED BY INTERNATIONAL MAGAZINE COMPANY, INC.

FEDERAL COORDINATOR OF TRANSPORTATION
Section of Transportation Service

FREIGHT TRAFFIC REPORT

# TRADING CENTERS OF AMERICAN TRADE AREAS

## MAINE
1 Augusta
2 Bangor
3 Houlton
4 Lewiston
5 Portland
6 Rockland
7 Waterville

## NEW HAMPSHIRE
8 Berlin
9 Concord
10 Dover
11 Keene
12 Laconia
13 Lebanon
14 Manchester
15 Nashua
16 Portsmouth
17 Rochester

## VERMONT
18 Barre
19 Bennington
20 Burlington
21 Brattleboro
22 Rutland
23 St. Albans
24 St. Johnsbury

## MASSACHUSETTS
25 Boston
26 Brockton
27 Fall River
28 Fitchburg
29 Greenfield
30 Haverhill
31 Holyoke
32 Lawrence
33 Lowell
34 New Bedford
35 North Adams
36 Pittsfield
37 Springfield
38 Worcester

## CONNECTICUT
39 Bridgeport
40 Danbury
41 Hartford
42 Meriden
43 New Britain
44 New Haven
45 New London
46 Norwalk
47 Norwich
48 Waterbury
49 Willimantic

## RHODE ISLAND
50 Newport
51 Providence
52 Woonsocket

## NEW YORK
53 Albany
54 Auburn
55 Binghamton
56 Buffalo
57 Corning
58 Elmira
59 Glens Falls
60 Gloversville
61 Hornell
62 Ithaca
63 Jamestown
64 Kingston
65 Little Falls
66 Malone
67 Middletown
68 Newburgh
69 Ogdensburg
70 Olean
71 Oneonta
72 Oswego
73 Plattsburg
74 Poughkeepsie
75 Rochester
76 Rome
77 Schenectady
78 Syracuse
79 Troy
80 Utica
81 Watertown
82 New York City

## PENNSYLVANIA
83 Allentown
84 Altoona
85 Bethlehem
86 Bradford
87 Butler
88 Carbondale
89 Carlisle
90 Chambersburg
91 Clearfield
92 Connellsville
93 Du Bois
94 Easton
95 Erie
96 Harrisburg
97 Hazelton
98 Huntington
99 Indiana
100 Johnstown
101 Kittanning
102 Lancaster
103 Lebanon
104 Lewiston
105 Lock Haven
106 Mahanoy City
107 Meadville
108 New Castle
109 Oil City
110 Pottstown
111 Pottsville
112 Punxsutawney
113 Reading
114 St. Marys
115 Scranton
116 Shamokin
117 Sharon
118 Sunbury
119 Uniontown
120 Warren
121 Washington
122 Wilkes-Barre
123 Williamsport
124 York
125 Philadelphia
126 Pittsburgh

## NEW JERSEY
127 Atlantic City
128 Asbury Park
129 Dover
130 Trenton

## MARYLAND
131 Baltimore
132 Cambridge
133 Cumberland
134 Frederick
135 Hagerstown
136 Salisbury

## DISTRICT OF COLUMBIA
137 Washington

## DELAWARE
138 Wilmington

## WEST VIRGINIA
139 Beckley
140 Bluefield
141 Charleston
142 Clarksburg
143 Elkins
144 Fairmont
145 Grafton
146 Huntington
147 Logan
148 Martinsburg
149 Morgantown
150 Parkersburg
151 Wheeling

## VIRGINIA
152 Charlottesville
153 Covington
154 Danville
155 Fredericksburg
156 Harrisburg
157 Lynchburg
158 Norfolk
159 Petersburg
160 Richmond
161 Roanoke
162 Staunton
163 Winchester

## NORTH CAROLINA
164 Asheville
165 Charlotte
166 Durham
167 Elizabeth City
168 Fayetteville
169 Goldsboro
170 Greensboro
171 Greenville
172 Henderson
173 Kinston
174 New Bern
175 Raleigh
176 Rocky Mount
177 Salisbury
178 Statesville
179 Washington
180 Wilmington
181 Wilson
182 Winston Salem

## SOUTH CAROLINA
183 Anderson
184 Charleston
185 Columbia
186 Florence
187 Georgetown
188 Greenville
189 Greenwood
190 Orangeburg
191 Rock Hill
192 Spartanburg
193 Sumter

## GEORGIA
194 Albany
195 Americus
196 Athens
197 Atlanta
198 Augusta
199 Bainbridge
200 Brunswick
201 Columbus
202 Cordele
203 Dublin
204 Fitzgerald
205 Gainesville
206 Griffin
207 LaGrange
208 Macon
209 Rome
210 Savannah
211 Thomasville
212 Valdosta
213 Waycross

## FLORIDA
214 Daytona Beach
215 Gainesville
216 Jacksonville
217 Key West
218 Miami
219 Ocala
220 Orlando
221 Pensacola
222 St. Petersburg
223 Tallahassee
224 Tampa
225 West Palm Beach

## MICHIGAN
226 Adrian
227 Alpena
228 Ann Harbor
229 Battle Creek
230 Bay City
231 Cadillac
232 Calumet
233 Escanaba
234 Flint
235 Grand Rapids
236 Iron Mountain
237 Ironwood
238 Jackson
239 Kalamazoo
240 Lansing
241 Manistee
242 Marquette
243 Muskegon
244 Petoskey
245 Pontiac
246 Port Huron
247 Saginaw
248 Sault Ste Marie
249 Traverse City
250 Detroit

## WISCONSIN
251 Appleton
252 Ashland
253 Eau Claire
254 Fon du Lac
255 Green Bay
256 Janesville
257 Kenosha
258 LaCrosse
259 Madison
260 Marinette
261 Manitowoc
262 Milwaukee
263 Oshkosh
264 Racine
265 Sheboygan
266 Stevens Point
267 Superior
268 Wausau

## ILLINOIS
269 Aurora
270 Bloomington
271 Cairo
272 Danville
273 Decatur
274 Elgin
275 Freeport
276 Galesburg
277 Joliet
278 Kankakee
279 Kewanee
280 Marion
281 Mount Vernon
282 Peoria
283 Peru
284 Quincy
285 Rockford
286 Springfield
287 Streator
288 Urbana
289 Chicago

## INDIANA
290 Anderson
291 Bedford
292 Crawfordsville
293 Elkhart
294 Evansville
295 Fort Wayne
296 Frankfort
297 Huntington
298 Indianapolis
299 Kokomo
300 LaFayette
301 Logansport
302 Madison
303 Marion
304 Michigan City
305 Muncie
306 Peru
307 Richmond
308 South Bend
309 Terre Haute
310 Vincennes
311 Wabash

## OHIO
312 Akron
313 Alliance
314 Ashtabula
315 Athens
316 Canton
317 Chillicothe
318 Cincinnati
319 Columbus
320 Dayton
321 East Liverpool
322 Findlay
323 Greenville
324 Hamilton
325 Lancaster
326 Lima
327 Mansfield
328 Marietta
329 Marion
330 Newark
331 Piqua
332 Portsmouth
333 Sandusky
334 Springfield
335 Steubenville
336 Toledo
337 Washington C.H.
338 Youngstown
339 Zanesville
340 Cleveland

## KENTUCKY
341 Ashland
342 Bowling Green
343 Danville
344 Frankfort
345 Hazard
346 Hopkinsville
347 Lexington
348 Louisville
349 Maysville
350 Middlesboro
351 Owensboro
352 Paducah
353 Somerset
354 Winchester

## TENNESSEE
355 Bristol
356 Chattanooga
357 Clarksville
358 Columbia
359 Jackson
360 Johnson City
361 Knoxville
362 Memphis
363 Morristown
364 Murfreesboro
365 Nashville

## ALABAMA
366 Anniston
367 Birmingham
368 Decatur
369 Dothan
370 Florence
371 Gadsden
372 Huntsville
373 Mobile
374 Montgomery
375 Opelika
376 Selma
377 Troy
378 Tuscaloosa

## MISSISSIPPI
379 Biloxi
380 Clarksdale
381 Columbus
382 Corinth
383 Greenville
384 Greenwood
385 Hattiesburg
386 Jackson
387 McComb
388 Meridian
389 Natchez
390 Tupelo
391 Vicksburg

## MINNESOTA
392 Albert Lea
393 Brainerd
394 Duluth
395 Fergus Falls
396 Hibbing
397 Mankato
398 Minneapolis
399 Rochester
400 St. Cloud
401 St. Paul
402 Winona

## IOWA
403 Atlantic
404 Burlington
405 Cedar Rapids
406 Centerville
407 Clinton
408 Creston
409 Davenport
410 Des Moines
411 Dubuque
412 Fort Dodge
413 Iowa City
414 Keokuk
415 Marshalltown
416 Mason City
417 Muscatine
418 Oskaloosa
419 Ottumwa
420 Sioux City
421 Waterloo

## MISSOURI
422 Cape Girardeau
423 Carthage
424 Chillicothe
425 Columbia
426 Hannibal
427 Jefferson City
428 Joplin
429 Kansas City
430 Kirksville
431 Moberly
432 St. Joseph
433 St. Louis
434 Sedalia
435 Springfield

## ARKANSAS
436 Batesville
437 El Dorado
438 Fayetteville
439 Fort Smith
440 Helena
441 Hope
442 Hot Springs
443 Jonesboro
444 Little Rock
445 Paragould
446 Pine Bluff
447 Russellville
448 Searcy
449 Texarkana

## LOUISIANA
450 Alexandria
451 Baton Rouge
452 Lake Charles
453 Monroe
454 New Orleans
455 Shreveport

## NORTH DAKOTA
456 Bismark
457 Devils Lake
458 Dickinson
459 Fargo
460 Grand Forks
461 Jamestown
462 Mandan
463 Minot
464 Valley City
465 Williston

## SOUTH DAKOTA
466 Aberdeen
467 Brookings
468 Deadwood
469 Huron
470 Mitchell
471 Pierre
472 Rapid City
473 Sioux City
474 Watertown
475 Yankton

## NEBRASKA
476 Beatrice
477 Columbus
478 Fremont
479 Grand Island
480 Hastings
481 Kearney
482 Lincoln
483 Nebraska City
484 Norfolk
485 North Platte
486 Omaha
487 Scottsbluff

## KANSAS
488 Arkansas City
489 Atchison
490 Chanute
491 Coffeyville
492 Dodge City
493 Emporia
494 Fort Scott
495 Hutchinson
496 Iola
497 Lawrence
498 Leavenworth
499 Manhattan
500 Ottawa
501 Parsons
502 Pittsburg
503 Salina
504 Topeka
505 Wichita

## OKLAHOMA
506 Ada
507 Altus
508 Ardmore
509 Bartlesville
510 Chickasha
511 El Reno
512 Enid
513 Guthrie
514 Lawton
515 McAlester
516 Miami
517 Muskogee
518 Oklahoma City
519 Okmulgee
520 Ponca City
521 Shawnee
522 Tulsa

## TEXAS
523 Abilene
524 Amarillo
525 Austin
526 Beaumont
527 Big Spring
528 Brenham
529 Brownsville
530 Brownwood
531 Bryan
532 Clebourne
533 Corpus Christi
534 Corsicana
535 Dallas
536 Denison
537 El Paso
538 Fort Worth
539 Galveston
540 Greenville
541 Houston
542 Laredo
543 Lubbock
544 Marshall
545 Palestine
546 Paris
547 San Angelo
548 San Antonio
549 Sherman
550 Temple
551 Tyler
552 Waco
553 Wichita Falls

## MONTANA
554 Billings
555 Bozeman
556 Butte
557 Dillon
558 Great Falls
559 Havre
560 Helena
561 Kalispell
562 Lewistown
563 Missoula

## WYOMING
564 Casper
565 Cheyenne
566 Laramie
567 Rock Springs
568 Sheridan

## COLORADO
569 Boulder
570 Colorado Springs
571 Denver
572 Durango
573 Fort Collins
574 Grand Junction
575 Greeley
576 Pueblo
577 Trinidad

## NEW MEXICO
578 Albuquerque
579 Gallup
580 Las Vegas
581 Raton
582 Roswell
583 Santa Fe
584 Silver City

## IDAHO
585 Blackfoot
586 Boise
587 Idaho Falls
588 Lewiston
589 Pocatello
590 Twin Falls
591 Wallace

## UTAH
592 Logan
593 Ogden
594 Provo
595 Salt Lake City

## ARIZONA
596 Douglas
597 Globe
598 Nogales
599 Phoenix
600 Prescott
601 Tucson

## WASHINGTON
602 Aberdeen
603 Bellingham
604 Everett
605 Olympia
606 Seattle
607 Spokane
608 Tacoma
609 Walla Walla
610 Wenatchee
611 Yakima

## OREGON
612 Astoria
613 Baker
614 Bend
615 Eugene
616 Klamath Falls
617 LaGrande
618 Medford
619 Pendleton
620 Portland
621 Salem
622 The Dalles

## NEVADA
623 Elko
624 Las Vegas
625 Reno
626 Tonopah

## CALIFORNIA
627 Bakersfield
628 Chico
629 El Centro
630 Eureka
631 Fresno
632 Marysville
633 Sacramento
634 San Bernardino
635 San Diego
636 Santa Barbara
637 Santa Cruz
638 Santa Rosa
639 Stockton
640 Los Angeles
641 San Francisco

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SECTION 1. DESCRIPTION OF UNDERLYING SURVEYS
Analysis 1.1 Railway Carrier Groups - Eastern District

| NAME OF CARRIERS | ROUTE MILES OPERATED TOTAL | MAIN | BRANCH | INVESTMENT FREIGHT PROPORTION 1932 (000) | FREIGHT SERVICE REVENUE 1930 (000) | 1932 (000) |
|---|---|---|---|---|---|---|
| UNITED STATES - TOTAL | 242,821 | 166,864 | 75,957 | $ 18,321,212 | $ 4,265,060 | $ 2,559,380 |
| EASTERN DISTRICT - TOTAL | 59,662 | 45,906 | 13,756 | 7,605,997 | 1,860,672 | 1,122,400 |
| NEW ENGLAND - TOTAL | 7,842 | 4,941 | 2,301 | $ 522,235 | $ 148,627 | $ 98,047 |
| Bangor & Aroostook Railroad | 614 | 326 | 288 | 27,704 | 7,498 | 5,486 |
| Boston & Maine Railroad | 2,081 | 1,018 | 1,063 | 162,258 | 47,675 | 31,558 |
| Canadian National in New England | 172 | 171 | 1 | 7,577 | 1,585 | 977 |
| Canadian Pacific Lines in Maine | 233 | 201 | 32 | 6,187 | 2,027 | 1,373 |
| Canadian Pacific Lines in Vermont | 85 | 85 | - | 401 | 1,189 | 664 |
| Central Vermont Railway | 457 | 398 | 59 | 23,318 | 5,958 | 4,188 |
| Maine Central Railroad | 1,118 | 592 | 526 | 141,470 | 141,878 | 9,064 |
| New York, New Haven & Hartford R.R. | 2,069 | 1,737 | 332 | 235,662 | 64,605 | 42,271 |
| Rutland Railroad | 413 | 413 | - | 14,658 | 3,213 | 2,466 |
| CENTRAL EAST - TOTAL | 52,969 | 41,511 | 11,458 | $ 7,083,762 | $ 1,712,045 | $ 1,024,353 |
| Akron, Canton & Youngstown Railway | 171 | 171 | - | 12,467 | 2,700 | 1,546 |
| Alton & Southern Railroad# | 75 | - | - | 3,280 | 1,093 | 904 |
| Baltimore & Ohio System (1) | 7,405 | 5,779 | 1,626 | 855,651 | 217,270 | 123,740 |
| Belt Railway Company of Chicago# | 460 | - | - | 1,007 | 6,803 | 3,927 |
| Bessemer & Lake Erie Railroad | 226 | 226 | - | 58,998 | 14,574 | 3,706 |
| Brooklyn Eastern District Terminal# | 11 | - | - | 66 | 1,311 | 851 |
| Cambria & Indiana Railroad | 38 | 38 | - | 8,388 | 1,370 | 1,126 |
| Chicago & Eastern Illinois Railway | 939 | 747 | 192 | 56,028 | 15,765 | 10,060 |
| Chicago & Illinois Midland Railway | 132 | 132 | - | 11,315 | 3,059 | 2,015 |
| Chicago, Indianapolis & Louisville Ry. | 647 | 575 | 72 | 41,156 | 12,426 | 6,696 |
| Chicago River & Indiana Railroad# | 241 | - | - | 10,570 | 6,125 | 4,315 |
| Delaware & Hudson Railroad | 872 | 489 | 383 | 106,862 | 33,349 | 20,493 |
| Delaware, Lackawanna & Western R.R. | 999 | 431 | 568 | 215,450 | 53,539 | 34,439 |
| Detroit & Mackinac Railway | 242 | 197 | 45 | 4,105 | 897 | 646 |
| Detroit, Toledo Shore Line Railroad | 50 | 50 | - | 9,086 | 3,725 | 2,304 |
| Detroit Terminal Railroad# | 120 | - | - | 5,417 | 1,362 | 602 |
| Detroit, Toledo & Ironton Railroad | 473 | 378 | 95 | 43,678 | 10,101 | 4,105 |
| Elgin, Joliet & Eastern Railway | 447 | 447 | - | 60,000 | 21,805 | 7,764 |
| Erie Railroad System (2) | 2,588 | 2,030 | 558 | 438,368 | 96,304 | 65,772 |
| Grand Trunk Western Railroad | 1,023 | 619 | 404 | 88,523 | 23,396 | 12,523 |
| Illinois Terminal Company | 545 | 545 | - | 34,185 | 5,916 | 3,762 |
| Indiana Harbor Belt Railroad# | 632 | - | - | 22,420 | 10,856 | 7,299 |
| Lake Terminal Railroad# | 40 | - | - | 3,619 | 985 | 353 |
| Lehigh & Hudson River Railway | 97 | 97 | - | 6,441 | 2,150 | 1,494 |
| Lehigh & New England Railroad | 228 | 126 | 102 | 21,250 | 5,031 | 3,266 |
| Lehigh Valley Railroad | 1,362 | 458 | 904 | 207,251 | 51,733 | 33,479 |
| Monongahela Railway | 178 | 75 | 103 | 26,421 | 5,980 | 3,612 |
| Montour Railroad | 58 | 58 | - | 9,793 | 2,563 | 1,504 |
| Newburgh & South Shore Railway# | 90 | - | - | 5,293 | 1,373 | 602 |
| New York, Ontario & Western Railway | 568 | 382 | 186 | 78,841 | 7,442 | 8,794 |
| New York Central System (3) | 11,674 | 11,215 | 459 | 1,462,157 | 345,619 | 212,457 |
| New York, Chicago & St. Louis Ry. | 1,691 | 1,657 | 34 | 206,904 | 43,567 | 27,639 |
| Pennsylvania Railroad System (4) | 11,396 | 7,073 | 4,323 | 1,675,746 | 428,872 | 252,521 |
| Peoria & Pekin Union Railway# | 160 | - | - | 7,528 | 1,566 | 839 |
| Pere Marquette Railway | 2,321 | 1,952 | 369 | 130,914 | 33,569 | 19,673 |
| Pittsburgh & Shawmut Railroad | 103 | 103 | - | 12,832 | 1,122 | 803 |
| Pittsburgh & West Virginia Railway | 138 | 138 | - | 57,499 | 3,739 | 2,238 |
| Reading System (5) | 2,154 | 1,601 | 553 | 469,581 | 121,078 | 71,510 |
| Terminal Railroad Ass'n. of St.Louis# | 397 | - | - | 72,792 | 9,766 | 5,405 |
| Toledo Terminal Railroad# | 95 | - | - | 12,130 | 1,171 | 756 |
| Union Railroad (Penna.)# | 298 | - | - | 38,934 | 8,844 | 1,949 |
| Wabash Railway System (6) | 2,774 | 2,471 | 303 | 257,781 | 58,668 | 36,553 |
| Western Maryland Railway | 892 | 814 | 78 | 143,367 | 17,402 | 11,848 |
| Wheeling & Lake Erie Railway | 537 | 437 | 100 | 89,668 | 16,058 | 8,465 |

(1) Includes Alton R.R., Baltimore & Ohio R.R., Baltimore & Ohio Chicago Terminal R.R.,# Staten Island Rapid Transit. (2) Includes Chicago & Erie R.R., Erie R.R., New Jersey & New York R.R., New York, Susq. & Western R.R. (3) Includes New York Central R.R., Pittsburgh & Lake Erie R.R. (4) Includes Long Island R.R., Pennsylvania R.R. (5) Includes Atlantic City R.R., Central R.R. Company of New Jersey, Reading Company. (6) Includes Ann Arbor R.R., Wabash Ry.
# Track Mileage not included in Route Mile Totals, amount utilized only for Yard Service.

SECTION 1. DESCRIPTION OF UNDERLYING SURVEYS

Analysis 1.2 Railway Carrier Groups - Southern District

| NAME OF CARRIERS | ROUTE MILES OPERATED TOTAL | MAIN | BRANCH | INVESTMENT FREIGHT PROPORTION 1932 (000) | FREIGHT SERVICE REVENUE 1930 (000) | 1932 (000) |
|---|---|---|---|---|---|---|
| UNITED STATES - TOTAL | 242,821 | 166,864 | 75,957 | $ 18,321,212 | $ 4,265,060 | $ 2,559,380 |
| SOUTHERN DISTRICT - TOTAL | 45,795 | 34,804 | 10,991 | 3,262,693 | 769,904 | 487,363 |
| POCAHONTAS - TOTAL | 6,102 | 4,924 | 1,178 | $ 979,330 | $ 245,890 | $ 170,140 |
| Chesapeake & Ohio Railway | 3,142 | 2,326 | 816 | 440,014 | 128,975 | 94,267 |
| Norfolk & Western Railway | 2,234 | 2,040 | 194 | 378,760 | 94,291 | 59,467 |
| Richmond, Fredericksburg & Potomac R.R. | 118 | 118 | - | 17,647 | 5,537 | 3,740 |
| Virginian Railway | 608 | 440 | 168 | 142,909 | 17,086 | 12,666 |
| SOUTHEAST - TOTAL | 39,696 | 29,882 | 9,814 | $ 2,283,363 | $ 524,015 | $ 317,224 |
| Atlanta & West Point System (1) | 556 | 398 | 158 | 24,481 | 7,345 | 4,254 |
| Atlantic Birmingham & Coast Railroad | 639 | 479 | 160 | 19,265 | 3,666 | 2,193 |
| Atlantic Coast Line System (2) | 5,486 | 3,095 | 2,391 | 202,866 | 50,463 | 31,132 |
| Clinchfield Railroad | 309 | 277 | 32 | 65,886 | 5,832 | 3,996 |
| Columbus & Greenville Railway | 168 | 168 | - | 2,681 | 1,393 | 652 |
| Florida East Coast Railway | 839 | 552 | 287 | 59,632 | 6,892 | 4,447 |
| Georgia & Florida Railroad | 464 | 223 | 241 | 16,617 | 1,576 | 759 |
| Gulf, Mobile & Northern System (3) | 998 | 787 | 211 | 39,745 | 8,042 | 4,424 |
| Illinois Central System (4) | 8,940 | 6,900 | 2,040 | 610,835 | 139,711 | 85,157 |
| Louisville & Nashville Railroad | 5,167 | 3,309 | 1,858 | 356,178 | 95,270 | 55,001 |
| Mississippi Central Railroad | 150 | 150 | - | 7,399 | 1,235 | 575 |
| Mobile & Ohio Railroad | 1,240 | 1,096 | 144 | 49,458 | 12,835 | 7,275 |
| Nashville, Chattanooga & St. Louis Ry. | 1,203 | 690 | 513 | 42,954 | 15,883 | 9,481 |
| Norfolk Southern Railroad | 933 | 527 | 406 | 28,202 | 6,395 | 3,937 |
| Seaboard Air Line Railway | 4,386 | 3,279 | 1,107 | 197,033 | 40,450 | 25,611 |
| Southern Railway System (5) | 7,920 | 7,702 | 218 | 553,193 | 124,185 | 76,578 |
| Tennessee Central Railway | 296 | 249 | 47 | 6,938 | 2,840 | 1,753 |

(1) Includes Atlanta & West Point Ry., Georgia R.R. Western Ry. of Alabama.
(2) Includes Atlantic Coast Line R.R., Charleston & Western Carolina Ry.
(3) Includes Gulf, Mobile & Northern R.R., New Orleans & Great Northern R.R.
(4) Includes Central of Georgia Ry., Gulf & Ship Island R.R., Illinois Central R.R., Yazoo & Mississippi Valley R.R.
(5) Includes Alabama Great Southern R.R., Cincinnati, New Orleans & Texas Pacific Ry., Georgia Southern & Florida Ry., New Orleans & Northeastern R.R., New Orleans Terminal Co.,# Northern Alabama Ry., Southern Railway.
# Track Mileage not included in Route Mile Totals, amount utilized only for Yard Service.



SECTION 1. DESCRIPTION OF UNDERLYING SURVEYS

Analysis 1.3 Railway Carrier Groups - Western District

| NAME OF CARRIERS | ROUTE MILES OPERATED TOTAL | MAIN | BRANCH | INVESTMENT FREIGHT PROPORTION 1932 (000) | FREIGHT SERVICE REVENUE 1930 (000) | 1932 (000) |
|---|---|---|---|---|---|---|
| UNITED STATES - TOTAL | 242,821 | 166,864 | 75,957 | $ 18,321,212 | $ 4,265,060 | $ 2,559,380 |
| WESTERN DISTRICT - TOTAL | 136,811 | 85,639 | 51,172 | 7,452,522 | 1,634,484 | 949,617 |
| NORTHWEST - TOTAL | 68,224 | 42,245 | 25,979 | $ 3,478,915 | $ 788,138 | $ 452,352 |
| Burlington System (1) | 11,332 | 6,873 | 4,459 | 518,368 | 132,239 | 75,317 |
| Chicago & North Western System (2) | 10,180 | 6,007 | 4,173 | 445,119 | 119,915 | 68,682 |
| Chicago Great Western Railroad | 1,499 | 1,166 | 333 | 134,133 | 19,643 | 13,736 |
| Chicago, Milwaukee, St. P. & Pac. R.R. | 11,243 | 7,298 | 3,945 | 557,676 | 120,137 | 72,862 |
| Duluth, Missabe & Northern Railroad | 564 | 564 | - | 66,733 | 20,852 | 2,307 |
| Duluth, South Shore & Atlantic Ry. | 560 | 560 | - | 32,969 | 3,117 | 1,329 |
| Duluth, Winnipeg & Pacific Railway | 179 | 179 | - | 10,713 | 1,510 | 752 |
| Great Northern Railway | 8,458 | 4,675 | 3,783 | 371,626 | 88,937 | 47,095 |
| Lake Superior & Ishpeming Railroad | 160 | 126 | 34 | 7,903 | 2,229 | 432 |
| Minneapolis & St. Louis Railroad | 1,627 | 1,208 | 419 | 55,768 | 11,624 | 7,230 |
| Minneapolis, St.P. & S.S.Marie Ry. | 4,476 | 3,681 | 795 | 161,724 | 33,837 | 18,942 |
| Northern Pacific Railway | 6,735 | 3,586 | 3,149 | 430,702 | 67,890 | 40,407 |
| Spokane International Railway | 163 | 143 | 20 | 4,678 | 821 | 461 |
| Spokane, Portland & Seattle Railway | 952 | 910 | 42 | 44,220 | 6,627 | 4,182 |
| Union Pacific System (3) | 10,096 | 5,269 | 4,827 | 636,583 | 158,758 | 98,619 |
| SOUTHWEST - TOTAL | 68,588 | 43,361 | 25,227 | $ 3,973,607 | $ 846,346 | $ 497,264 |
| Atchison, Topeka & Santa Fe System (4) | 13,534 | 6,610 | 6,924 | 820,854 | 179,932 | 109,824 |
| Burlington-Rock Island Railroad | 280 | 218 | 62 | 11,161 | 2,091 | 970 |
| Chicago, R.I. & Pacific System (5) | 8,333 | 5,536 | 2,797 | 366,391 | 99,163 | 58,663 |
| Denver & Rio Grande Western Railroad | 2,551 | 1,961 | 590 | 170,889 | 25,395 | 15,598 |
| Denver & Salt Lake Railway | 232 | 232 | - | 12,709 | 2,883 | 1,724 |
| Fort Smith & Western Railway | 250 | 250 | - | 6,109 | 1,194 | 635 |
| Kansas City Southern System (6) | 933 | 865 | 68 | 97,329 | 17,510 | 9,147 |
| Louisiana & Arkansas System (7) | 864 | 864 | - | 35,926 | 7,479 | 4,497 |
| Midland Valley System (8) | 822 | 822 | - | 36,343 | 6,706 | 3,608 |
| Missouri & North Arkansas Railway | 365 | 365 | - | 3,273 | 1,482 | 764 |
| Missouri-Kansas-Texas System (9) | 3,294 | 2,295 | 999 | 175,776 | 37,568 | 22,711 |
| Missouri Pacific System (10) | 10,582 | 5,382 | 5,200 | 505,523 | 131,538 | 78,430 |
| Nevada Northern Railway | 166 | 141 | 25 | 1,440 | 661 | 273 |
| St.Louis-San Francisco System (11) | 5,889 | 4,408 | 1,481 | 325,767 | 61,015 | 36,777 |
| St.Louis Southwestern System (12) | 1,913 | 1,248 | 665 | 106,200 | 20,116 | 11,900 |
| San Diego & Arizona Eastern Railway | 155 | 155 | - | 9,553 | 784 | 303 |
| Southern Pacific System (13) | 14,125 | 8,812 | 5,313 | 1,024,670 | 200,890 | 110,844 |
| Texas & Pacific Railway | 2,338 | 1,478 | 860 | 128,207 | 30,815 | 17,431 |
| Texas Mexican Railway | 162 | 162 | - | 5,459 | 1,036 | 621 |
| Utah Railway | 111 | 111 | - | 8,842 | 1,690 | 1,156 |
| Western Pacific Railroad | 1,214 | 1,054 | 160 | 112,653 | 14,635 | 10,158 |
| Wichita Falls & Southern Railroad | 204 | 204 | - | 6,565 | 960 | 590 |
| Wichita Valley Railroad | 271 | 188 | 83 | 1,968 | 801 | 641 |

(1) Includes Chicago, Burlington & Quincy R.R., Colorado & Southern Ry., Ft. Worth & Denver City Ry.
(2) Includes Chicago & North Western Ry., Chicago, St.P. Minn. & Omaha Ry.
(3) Includes Los Angeles & Salt Lake R.R., Oregon Short Line R.R., Oregon-Wash. R.R. & Nav. Co., St. Joseph & Grand Island Ry., Union Pacific R.R.
(4) Includes Atchison, Topeka & Santa Fe Ry., Pan Handle & Santa Fe Ry., Gulf, Colorado & Santa Fe.
(5) Includes Chicago, R.I. & Gulf Ry., Chicago, R.I. & Pacific Ry.
(6) Includes Kansas City Southern Ry., Texarkana & Ft. Smith Ry.
(7) Includes Louisiana & Arkansas Ry., Louisiana, Arkansas & Texas Ry.
(8) Includes Kansas, Oklahoma & Gulf Ry., Midland Valley R.R., Oklahoma City-Ada-Atoka Ry.
(9) Includes Missouri-Kansas-Texas Ry., Missouri-Kansas-Texas Ry. of Texas.
(10) Includes International-Great Northern R.R., Gulf Coast Lines (Beaumont, SourLake & Western Ry., New Orleans, Texas & Mexico Ry.; St. Louis, Brownsville & Mexico Ry., San Antonio, Uvalde & Gulf R.R.) Missouri-Illinois R.R.; Missouri Pacific R.R.
(11) Includes Ft. Worth & Rio Grand Ry., St. Louis-San Francisco Ry., St. Louis-San Francisco & Texas Ry., Quanah, Acme & Pacific Ry.
(12) Includes St. Louis Southwestern Ry., St. Louis Southwest Ry. of Texas.
(13) Includes Northwestern Pacific R.R., Southern Pacific Co., Texas & New Orleans Ry.

## Analysis 1.4 Water Carrier Groups - Atlantic Coastwise and Inland

| GROUP / CLASS / NAME OF COMPANY | ROUTE MILES WATER DISTANCE (miles) | ROUTE MILES RAIL DISTANCE (miles) | FREIGHT PROPORTION OF INVESTMENT (000) | FREIGHT REVENUE 1932 (000) |
|---|---|---|---|---|
| UNITED STATES | | | | |
| Total | 262,057 | 189,739 | $ 357,350 | $ 119,581 |
| Common - (Carlot) | 169,172 | 112,865 | 245,136 | 102,407 |
| Cargo | | | | |
| Contract | 55,733 | 43,395 | 75,760 | 12,466 |
| Private | 37,152 | 33,479 | 36,454 | 4,708 |
| ATLANTIC COASTWISE AND INLAND | | | | |
| Regional Total | 40,900 | 38,690 | $ 60,766 | $ 28,045 |
| Common - (Carlot) | 22,387 | 19,860 | 49,140 | 24,767 |
| Cargo | | | | |
| Contract | 4,833 | 4,586 | 7,148 | 2,516 |
| Private | 13,680 | 14,244 | 4,478 | 761 |
| COMMON - (CARLOT) | | | | |
| Baltimore and Carolina Line | 5,757 | 3,778 | $ 64 | $ 1,262 |
| Baltimore Steam Packet Company | 188 | 264 | 1,726 | 412 |
| Ben Franklin Transportation Company | 15 | 15 | 99 | 61 |
| Bull Steamship Company | 1,942 | 1,152 | 31 | 707 |
| Bruxton Lines | 116 | 89 | 112 | 221 |
| Central Vermont Transportation Company | 120 | 123 | 399 | 1,134 |
| Charleston-Beaufort Lines | 125 | 95 | 5 | 37 |
| Chesapeake Steamship Company | 381 | 450 | 1,974 | 578 |
| Coburn Steamship Company | 20 | 20* | 74 | 6 |
| Casco Bay Lines | 41 | 41* | 24 | 18 |
| Colonial Navigation Company | 380 | 375 | 392 | 596 |
| Dyer Transportation Line | 21 | 22 | 9 | 32 |
| Elizabeth City-Carolina Line | 70 | 55 | 22 | 12 |
| Ericsson Line | 120 | 96 | # | 293 |
| Eastern Steamship Line | 1,820 | 2,178 | 20,464 | 7,488 |
| Hudson River Steamboat Company | 158 | 150 | 283 | 559 |
| Lake Transfer Company | 7 | 7* | 12 | 7 |
| Merchants' and Miners' Transportation Company | 6,450 | 6,169 | 7,756 | 5,096 |
| Middlesex Transportation Company | 40 | 33 | 228 | 112 |
| Miller River Line | 100 | 77 | 25 | 12 |
| New England Steamship Company | 995 | 943 | 6,301 | 1,988 |
| New York and New Jersey Steamboat Company | 85 | 95 | 183 | 130 |
| Norfolk, Baltimore and Carolina Line | 860 | 1,029 | 291 | 359 |
| Norfolk and Washington Steamship Company | 196 | 205 | 499 | 143 |
| North Carolina Line | 450 | 399 | 115 | 33 |
| Ocean Steamship Company of Savannah | 1,015 | 1,079 | 5,011 | 1,623 |
| Peninsula and Occidental Steamship Company | 360 | 360* | 1,191 | 114 |
| Philadelphia and Norfolk Steamship Company | 250 | 255 | 1,360 | 1,180 |
| Smithfield, Newport News and Norfolk Steamship Co. | 14 | 14* | 6 | 15 |
| Starin New Haven Lines | 80 | 73 | 159 | 257 |
| Stevens Line Company | 26 | 26* | 39 | 23 |
| Thames River Line | 185 | 193 | 286 | 258 |
| CONTRACT - (CARGO) | | | | |
| American Sugar Transit Corporation | 231 | 197 | $ 1,867 | $ 7 |
| Clark (M.L.) | 400 | 267 | 315 | 38 |
| Mallory (C.D.) | 800 | 800 | 476 | 741 |
| North American Steamship Company | 535 | 580 | 24 | 107 |
| Tracy (M. & J.) | 2,867 | 2,742 | 4,466 | 1,623 |
| PRIVATE - (CARGO) | | | | |
| Brooks-Scanlon Company | 2,100 | 2,887 | $ 212 | $ 94 |
| Continental Steamship Company | 2,000 | 1,514 | 2,623 | 326 |
| Hartwelson Steamship Company | 523 | 580 | 80 | 52 |
| P. Dougherty Company | 550 | 580 | 250 | 27 |
| Proctor and Gamble Company | 918 | 1,079 | # | 45 |
| River Transport Line | 25 | 25* | 55 | 19 |
| Rockland Transportation Company | 958 | 1,048 | 69 | 84 |
| Welhart Steamship Company | 450 | 580 | 78 | 60 |
| Wilmore Steamship Company | 6,164 | 5,951 | 1,111 | 54 |

* Water Distance Used. # Not Reported.



## Analysis 1.5 Water Carrier Groups - Atlantic Gulf, Intercoastal and Inland Waterways

| GROUP / CLASS / NAME OF COMPANY | ROUTE MILES WATER DISTANCE (miles) | ROUTE MILES RAIL DISTANCE (miles) | FREIGHT PROPORTION OF INVESTMENT (000) | FREIGHT REVENUE 1932 (000) |
|---|---|---|---|---|
| ATLANTIC GULF | | | | |
| Regional Total | 35,289 | 28,784 | $ 37,513 | $ 14,527 |
| Common - (Carlot) | 26,139 | 22,252 | 31,243 | 13,299 |
| Cargo | | | | |
| Contract | 7,250 | 4,832 | 5,052 | 1,033 |
| Private | 1,900 | 1,700 | 1,218 | 194 |
| COMMON - (CARLOT) | | | | |
| Clyde Mallory Line | 9,724 | 9,181 | $ 7,840 | $ 5,368 |
| Coast Transportation Company | 142 | 237 | 37 | 60 |
| High Seas Transportation Company | 1,900 | 1,557 | 135 | 132 |
| Mooremack Gulf Lines | 4,249 | 2,693 | 835 | 1,401 |
| Newtex Steamship Corporation | 1,963 | 1,653 | 1,234 | 563 |
| Pensacola, St. Andrews and Gulf Steamship Company | 350 | 337 | 32 | 61 |
| Seatrain Lines | 1,789 | 1,789* | 4,567 | 548 |
| Southern Pacific Steamship Company | 3,848 | 3,227 | 15,911 | 3,948 |
| Southern Steamship Company | 1,874 | 1,578 | 652 | 1,219 |
| CONTRACT - (CARGO) | | | | |
| Union Sulphur Company | 7,250 | 4,832 | $ 5,052 | $ 1,033 |
| PRIVATE - (CARGO) | | | | |
| Freeport Sulphur Company | 1,900 | 1,700 | $ 1,218 | $ 194 |
| INTERCOASTAL | | | | |
| Regional Total | 94,227 | 45,214 | $ 101,230 | $ 39,128 |
| Common - (Carlot) | 88,127 | 42,245 | 99,830 | 38,946 |
| Private - (Cargo) | 6,100 | 2,969 | 1,400 | 183 |
| COMMON - (CARLOT) | | | | |
| American-Hawaiian Steamship Company | 13,583 | 6,086 | $ 20,028 | $ 7,972 |
| American Mail Line | 5,560 | 3,116 | 5,965 | 2,947 |
| Calmar Steamship Company | 7,637 | 2,969 | 2,963 | 1,847 |
| Christenson Steamship Company | 5,500 | 3,100 | 2,160 | 1,507 |
| Isthmian Steamship Company | 7,722 | 3,100 | 29,257 | 7,502 |
| Luckenback Steamship Company | 13,046 | 8,794 | 23,822 | 6,777 |
| McCormack Steamship Company | 7,150 | 2,910 | 1,855 | 2,040 |
| Panama Mail Steamship Company | 7,014 | 3,116 | 7,358 | 2,341 |
| Pacific-Atlantic Steamship Company | 7,415 | 2,958 | 4,452 | 2,544 |
| Shephard Steamship Company | 7,500 | 2,970 | 567 | 991 |
| Swayne and Hoyt | 6,000 | 3,126 | 1,403 | 2,480 |
| PRIVATE - (CARGO) | | | | |
| Weyerhauser Steamship Company | 6,100 | 2,969 | $ 1,400 | $ 183 |
| INLAND WATERWAYS | | | | |
| Regional Total | 13,599 | 8,814 | $ 31,680 | $ 9,581 |
| Common - (Carlot) | 9,489 | 6,232 | 30,198 | 8,571 |
| Cargo | | | | |
| Contract | 3,960 | 2,425 | 1,469 | 1,010 |
| Private | 150 | 157 | 13 | # |
| COMMON - (CARLOT) | | | | |
| American Barge Line | 1,950 | 1,128 | $ 2,362 | $ 859 |
| Commercial Transportation Company | 430 | 283 | 121 | 139 |
| Eagle Packet Company | 750 | 739 | 66 | 21 |
| El Rito Transportation Company | 118 | 59 | 38 | 24 |
| Inland Waterways Corporation | 2,786 | 1,873 | 23,588 | 5,914 |
| Illinois River Packet Company | 52 | 87 | 12 | 14 |
| John I. Hay Company | 1,741 | 1,072 | 597 | 64 |
| Mississippi Valley Barge Line | 1,662 | 991 | 3,414 | 1,536 |
| CONTRACT - (CARGO) | | | | |
| Baker Tow Boat Company | 367 | 433 | $ 111 | $ 40 |
| Burke Line Steamers | 670 | 430 | 24 | 212 |
| Union Barge Line Corporation | 2,560 | 1,346 | 1,327 | 727 |
| Warrior Packet Line | 363 | 216 | 7 | 31 |
| PRIVATE - (CARGO) | | | | |
| Acadia-Vermillion Navigation Company | 150 | 157 | $ 13 | # |

* Water Distance Used. # Not Reported.

SECTION 1. DESCRIPTION OF UNDERLYING SURVEYS

Analysis 1.6 Water Carrier Groups - Great Lakes System

| GROUP<br>CLASS<br>NAME OF COMPANY | ROUTE MILES<br>WATER DIS-TANCE (miles) | <br>RAIL DIS-TANCE (miles) | FREIGHT PRO-PORTION OF INVESTMENT (000) | FREIGHT REVENUE 1932 (000) |
|---|---|---|---|---|
| GREAT LAKES SYSTEM (LAKES, RIVERS AND CANALS) | | | | |
| Regional Total | 58,357 | 49,049 * | 111,494 * | 18,503 |
| Common - (Carlot) | 8,931 | 7,837 | 21,748 | 7,404 |
| Cargo | | | | |
| Contract | 36,004 | 28,680 | 61,224 | 7,711 |
| Private | 13,422 | 12,532 | 28,522 | 3,388 |
| COMMON - (CARLOT) | | | | |
| Arnold Transit Company | 89 | 89 * | 21 * | 7 |
| Ashley and Dustin Steamer Line | 75 | 75 * | 2 | ø |
| Canada-Atlantic Transit Company | 580 | 646 | 410 | 384 |
| Cleveland and Buffalo Transportation Company | 330 | 539 | 1,652 | 197 |
| Colombian Steamship Company | 1,450 | 880 | # | 124 |
| Detroit and Cleveland Navigation Company | 1,010 | 666 | 7,529 | 985 |
| Great Lakes Transit Company | 1,900 | 1,304 | 6,546 | 3,294 |
| Mackinac Transportation Company | 9 | 9 * | 389 | 109 |
| Minnesota-Atlantic Transit Company | 986 | 826 | # | 986 |
| Nicholson Universal Steamship Company | 1,352 | 892 | 2,752 | 520 |
| Ontario Car Ferry | 60 | 270 | 712 | 158 |
| Pennsylvania-Ontario Transportation Company | 51 | 205 | 350 | 140 |
| Pere Marquette Line | 100 | 359 | 354 | 221 |
| Sandusky and Isles Steamship Company | 24 | 24 * | 15 | 5 |
| Toronto, Hamilton and Buffalo Navigation Company | 91 | 180 | 434 | 29 |
| Western Transit Company | 727 | 618 | 29 | 36 |
| Wisconsin and Michigan Transportation Company | 97 | 255 | 553 | 209 |
| CONTRACT - (CARGO) | | | | |
| American Steamship Company | 750 | 778 * | 5,391 * | 942 |
| Bison Steamship Company | 800 | 670 | 278 | 119 |
| Brown Steamship Company | 4,625 | 2,257 | 596 | 120 |
| Federal Motorship Company | 1,673 | 803 | 816 | 237 |
| Fontana Steamship Company | 800 | 808 | 417 | 17 |
| Globe Steamship Company | 800 | 808 | 2,109 | 97 |
| Grammer Steamship Company | 800 | 808 | 233 | 81 |
| Great Lakes Steamship Company | 800 | 808 | 8,843 | 210 |
| Interlake Steamship Company | 800 | 808 | 19,759 | 247 |
| Kinsman Transit Company | 800 | 808 | 2,760 | 419 |
| Midland Steamship Company | 800 | 808 | 2,441 | 353 |
| Morrow Steamship Company | 800 | 808 | 1,806 | 315 |
| National Steamship Company | 0 | 0 | 356 | 3 |
| Paisley, (J.A.) Steamship Company | 800 | 808 | 518 | 206 |
| Peterson Steamship Company | 830 | 605 | 97 | 62 |
| Petoskey Transportation Company | 290 | 269 | 575 | 53 |
| Pioneer Steamship Company | 800 | 808 | 7,129 | 1,044 |
| Seaboard-Great Lakes Corporation | 5,250 | 3,934 | 5 | 1,884 |
| Sierre Steamship Company | 200 | 200 * | 440 | 196 |
| Triton Steamship Company | 0 | 0 | 360 | 1 |
| United Steamship Company | 200 | 200 * | 651 | 102 |
| Western Steamship Company | 900 | 808 | 700 | 243 |
| Wilson Transit Company | 12,486 | 10,076 | 4,944 | 758 |
| PRIVATE - (CARGO) | | | | |
| Buffalo Gravel Corporation | 75 | 90 * | 1,607 * | 161 |
| Cement Transit Company | 120 | 162 | 430 | 17 |
| Cleveland-Cliff Steamship Company | 800 | 808 | 6,510 | 758 |
| Detroit Sulphite Transportation Company | 600 | 833 | 305 | 82 |
| Ford Motor Company | 6,538 | 5,660 | 11,902 | 522 |
| Inland Steamship Company | 800 | 473 | 1,485 | 238 |
| Lakewood Steamship Company | 900 | 826 | 370 | 217 |
| Maritime Steamship Company | 800 | 808 | 264 | 105 |
| Presque Isle Transportation Company | 800 | 808 | 1,147 | 106 |
| Schmeider Transportation Company | 0 | 0 | 597 | 175 |
| Shenango Furnace Company | 834 | 781 | 1,417 | 47 |
| Valley Camp Steamship Company | 800 | 808 | 986 | 310 |
| Wyandotte Transportation Company | 355 | 475 | 1,502 | 650 |

* Water Distance Used. # Not Reported. ø Less than $500.



SECTION 1. DESCRIPTION OF UNDERLYING SURVEYS

Analysis 1.7 Water Carrier Groups - Pacific Coastwise and Inland

| GROUP<br>CLASS<br>NAME OF COMPANY | ROUTE MILES<br>WATER DIS-TANCE (miles) | <br>RAIL DIS-TANCE (miles) | FREIGHT PRO-PORTION OF INVESTMENT (000) | FREIGHT REVENUE 1932 (000) |
|---|---|---|---|---|
| PACIFIC COASTWISE AND INLAND | | | | |
| Regional Total | 19,685 | 19,188 * | 14,667 * | 9,797 |
| Common - (Carlot) | 14,099 | 14,439 | 12,977 | 9,420 |
| Cargo | | | | |
| Contract | 3,686 | 2,872 | 867 | 196 |
| Private | 1,900 | 1,877 | 823 | 182 |
| COMMON - (CARLOT) | | | | |
| Alaska Steamship Company | 6,051 | 6,051 * | 4,379 * | 1,526 |
| American Transportation Company | 105 | 99 | 9 | 14 |
| Bay Cities Transportation Company | 10 | 15 | 200 | 328 |
| Bay Shore Freight Lines | 30 | 40 | 164 | 73 |
| Bay Transportation Company | 30 | 29 | 414 | 353 |
| Beadle Steamship Company | 260 | 347 | # | 197 |
| Border Lines Transportation Company | 386 | 425 | 100 | 99 |
| Carl Anderson | 40 | 40 * | # | 2 |
| George Wallenrod | 20 | 15 | 52 | 38 |
| Johnson, (A.F.) | 190 | 122 | 13 | 1 |
| Kitsap County Transportation Company | 82 | 82 * | 476 | 202 |
| Lafferty Transportation Company | 20 | 20 * | 57 | 48 |
| Los Angeles Steamship Company | 450 | 594 | 1,519 | 2,170 |
| McCormack Steamship Company | 2,546 | 2,784 | 1,805 | 2,731 |
| Napa Transportation Company | 125 | 130 | 44 | 36 |
| Paramino Lumber Company | 1,025 | 906 | 196 | 136 |
| Puget Sound Freight Lines | 408 | 428 | 79 | 239 |
| Puget Sound Navigation Company | 205 | 187 | 2,905 | 832 |
| Rio Vista Lighterage Company | 40 | 40 * | 82 | 92 |
| Salem Navigation Company | 72 | 57 | 31 | 21 |
| Sudden Steamship Company | 570 | 594 | 50 | 68 |
| Tahoe Transportation Company | 36 | 36 * | # | 14 |
| Vashon Navigation Company | 9 | 9 * | 1 | 2 |
| Washington Route | 165 | 165 * | 12 | 48 |
| Wills Navigation Company | 1,200 | 1,200 * | 60 | 50 |
| Wilmington Transportation Company | 24 | 24 * | 329 | 99 |
| CONTRACT - (CARGO) | | | | |
| Coastwise Steamship and Barge Line | 986 | 1,032 * | 119 * | 12 |
| Freeman (S.S.) and Sons | 400 | 400 * | 462 | 113 |
| Griffiths (James) and Sons | 2,300 | 1,440 | 286 | 71 |
| PRIVATE - (CARGO) | | | | |
| E. K. Wood Lumber Company | 1,125 | 499 * | 551 * | 139 |
| Moore Mill and Lumber Company | 700 | 1,255 | 193 | 28 |
| Red Collar Line | 45 | 93 | 66 | 9 |
| Wahkiakum Transportation Company | 30 | 30 | 13 | 6 |

* Water Distance Used. # Not Reported.

SECTION 1. DESCRIPTION OF UNDERLYING SURVEYS
Analysis 1.8 Pipe Line Carrier Groups

| | ROUTE MILES | | | INVESTMENT | REVENUES | |
|---|---|---|---|---|---|---|
| | TOTAL | TRUNK | GATHERING | 1932 (000) | 1930 (000) | 1932 (000) |
| UNITED STATES - TOTAL | 92,783 | 51,405 | 41,378 | $ 763,942 | $ 205,932 | $211,789 |
| NORTH ATLANTIC COAST CARRIERS | 14,723 | 5,283 | 9,440 | 54,845 | 8,623 | 9,294 |
| Bradford Transit Co. | 765 | - | 765 | 1,844 | 930 | 595 |
| Eureka Pipe Line Co. | 4,595 | 166 | 4,429 | 10,921 | 1,885 | 1,309 |
| Imperial Pipe Line Co. Ltd. | 297 | 297 | - | 2,066 | 560 | 576 |
| National Transit Co. | 3,575 | 1,226 | 2,349 | 8,948 | 1,620 | 1,520 |
| New York Transit Co. | 307 | 120 | 187 | 1,018 | 282 | 203 |
| Northern Pipe Line Co. | 629 | 629 | - | 2,984 | 288 | 211 |
| Pure Oil Pipe Line Co. - Pennsylvania | 57 | 57 | - | 51 | 99 | 66 |
| South West Pennsylvania Pipe Lines | 1,902 | 311 | 1,591 | 4,398 | 699 | 658 |
| Sun Pipe Line, Inc. | 90 | 90 | - | 754 | - | 190 |
| Susquehanna Pipe Line Co. | 548 | 548 | - | 5,264 | - | 1,998 |
| Tide Water Pipe Co. Ltd. | 1,363 | 1,244 | 119 | 9,556 | 1,560 | 1,160 |
| Tuscarora Oil Co., Ltd. | 595 | 595 | - | 7,051 | 701 | 807 |
| GREAT LAKES - SOUTHWEST CARRIERS | 44,782 | 23,870 | 20,912 | $ 319,191 | $ 72,847 | $100,144 |
| Ajax Pipe Line Co. | 785 | 785 | - | 13,187 | 173 | 6,606 |
| Buckeye Pipe Line Co. | 7,191 | 1,494 | 5,697 | 20,692 | 4,209 | 2,951 |
| Great Lakes Pipe Line Co. | 1,237 | 1,237 | - | 15,779 | - | 4,551 |
| Gulf Pipe Line Co. of Penna | 783 | 783 | - | 12,396 | - | 4,706 |
| Illinois Pipe Line Co. | 5,637 | 1,908 | 3,729 | 43,567 | 11,110 | 9,489 |
| Indiana Pipe Line Co. | 816 | 650 | 166 | 5,242 | 1,547 | 606 |
| *Maryland Pipe Line Co. | - | - | - | 158 | - | - |
| Phillips Pipe Line Co. | 764 | 764 | - | 12,604 | - | 3,771 |
| Pure Oil Pipe Line Co. - Ohio | 502 | 44 | 458 | 2,258 | 1,033 | 2,029 |
| Shell Pipe Line Corporation | 3,985 | 3,367 | 618 | 51,536 | 22,986 | 20,259 |
| Sinclair Prairie Pipe Line Co. (Okla.) | 11,821 | 5,886 | 5,935 | 21,477 | 632 | 10,541 |
| Sinclair Prairie Pipe Line Co. (Tex.) | 2,699 | 1,038 | 1,661 | 11,663 | - | 2,578 |
| Southern Pipe Line Co. | 261 | 261 | - | 2,083 | 523 | 238 |
| Stanolind Pipe Line Co. | 7,297 | 4,649 | 2,648 | 89,179 | 23,751 | 23,869 |
| Sun Oil Line Co. | 98 | 98 | - | 680 | - | 206 |
| Texas - Empire Pipe Line Co. (Okla.) | 906 | 906 | - | 16,690 | 6,883 | 7,744 |
| SOUTHWEST GULF CARRIERS | 33,278 | 22,252 | 11,026 | $ 389,905 | $ 124,463 | $102,351 |
| Arkana Transit Corporation | 32 | 32 | - | 226 | 40 | 19 |
| Arkansas Pipeline Corporation | 141 | 67 | 74 | 1,060 | - | 1,053 |
| Atlantic Pipe Line Co. | 1,219 | 922 | 297 | 20,515 | 5,224 | 6,851 |
| Atlas Pipeline Co., Inc. | 150 | 57 | 93 | 1,361 | - | 885 |
| Consolidated Pipe Line Co. | 242 | 151 | 91 | 1,180 | - | 157 |
| Continental Pipe Line Co. | 1,189 | 463 | 726 | 7,562 | 1,953 | 1,471 |
| Empire Pipeline Co. | 964 | 495 | 469 | 9,414 | 4,017 | 3,285 |
| Gulf Pipe Line Co. | 4,495 | 3,426 | 1,069 | 54,469 | 21,890 | 10,655 |
| Gulf Pipe Line Co. of Okla. | 1,471 | 734 | 737 | 12,594 | 5,134 | 4,138 |
| Humble Pipe Line Co. | 6,533 | 4,252 | 2,281 | 86,793 | 31,736 | 24,225 |
| Magnolia Pipe Line Company | 5,935 | 3,844 | 2,091 | 68,278 | 18,825 | 14,795 |
| Oklahoma Pipe Line Co. | 1,987 | 1,187 | 800 | 23,305 | 8,586 | 6,673 |
| Pure - Van Pipe Line Co. | 271 | 222 | 49 | 4,910 | - | 4,128 |
| Spartan Refining Co., Inc. | 105 | 82 | 23 | 2,313 | - | 115 |
| Standard Pipe Line Co., Inc. | 1,922 | 1,557 | 365 | 29,221 | 9,544 | 7,278 |
| Texas-Empire Pipe Line Co. of Texas | 203 | 203 | - | 3,362 | - | 2,949 |
| Texas Pipe Line Co. (Texas) | 5,121 | 3,871 | 1,250 | 56,541 | 15,102 | 12,096 |
| Texas Pipe Line Co. of Oklahoma | 1,298 | 687 | 611 | 6,801 | 2,412 | 1,578 |

* Not in operation, included only for purposes of investment summary.
Source I.C.C. statistics. Includes all Pipe Line Companies reporting to the Interstate Commerce Commission which operated for the full year 1932.



SECTION 1. DESCRIPTION OF UNDERLYING SURVEYS
Analysis 1.9 Lists of Commodity and Business Groups

Rail Carrier Inquiry Commodity Groups

| No. | Name |
|---|---|
| 01 | Bulk Grain and Beets |
| 02 | Other Cereals |
| 03 | Cotton, Hay and Tobacco |
| 04 | Perishables |
| 05 | Miscellaneous Farm Products |
| 06 | Live Animals |
| 07 | Edible Animal Products |
| 08 | Coal and Coke |
| 09 | Ores |
| 10 | Sand, Stone and Gravel |
| 11 | Sulphur and Sulphric Acid |
| 12 | Petroleum and Products |
| 13 | Forest Products |
| 14 | Oil-Vegetable and Animal |
| 15 | Iron and Steel |
| 16 | All Other Metals |
| 17 | Appliances |
| 18 | Building Materials |
| 19 | Manufactured Food |
| 20 | Paper and Products |
| 21 | Chemicals |
| 22 | Textiles and Leather |
| 23 | Glass and Tile |
| 24 | Miscellaneous |

Shippers' Inquiry Business Groups

| No. | Name |
|---|---|
| 01 | Automotive Vehicles, Parts, and Accessaries |
| 02 | Baking Goods, Candy Confectionery, etc. |
| 03 | Barrels, Boxes, Crates, Cooperage, etc. |
| 04 | Beverages and Liquors |
| 05 | Boats and Marine Equipment and Supplies |
| 06 | Books, Periodicals, Printed Matter |
| 07 | Boots and Shoes |
| 08 | Building and Construction Materials, Brick, Cement, Lumber, Millwork, Piling, Tile, etc. |
| 09 | Canned Goods |
| 10 | Cereals, Grains, Flour, Meal, Mixed Feeds |
| 11 | Chemicals, heavy |
| 12 | Coal, Coke and Fuel |
| 13 | Cotton, Cotton Linters, etc. |
| 14 | Department Store Merchandise, Drugs, Chemicals, Toilet Articles |
| 15 | Dry Goods, Clothing, Hats, Millinery, Notions |
| 16 | Fresh Fruits, Vegetables, and Produce |
| 17 | Furniture, Carpets, Household Goods, House and Office Furniture |
| 18 | Groceries |
| 19 | Iron and Steel, structural |
| 20 | Iron and Steel Articles and Hardware |
| 21 | Leather and Leather Goods |
| 22 | Livestock and Poultry |
| 23 | Machines, Machinery Appliances, Vehicles, Implements |
| 24 | Metals, Nonferrous |
| 25 | Musical Instruments and Supplies |
| 26 | Ores and Concentrates |
| 27 | Packing House Products |
| 28 | Paints, Varnishes, Gums Shellac |
| 29 | Paper, Paper Products |
| 30 | Petroleum, crude, refined, and Products |
| 31 | Porcelain, China, Enamelware |
| 32 | Plumbing and Heating Supplies and Fixtures |
| 33 | Rubber, Rubber Articles, Tires |
| 34 | Sand, Stone, and Gravel |
| 35 | Seed, Nursery and Florists Material |
| 36 | Sugar, Sirups and Molasses |
| 37 | Textiles |
| 38 | Tobacco, Tobacco Products |
| 39 | Vegetable, Oils, Meal, and Cake |
| 40 | Miscellaneous Commodities |

I.C.C. Freight Commodity Groups Years 1920 through 1927

| No. | Name |
|---|---|
| 1 | Wheat |
| 2 | Corn |
| 3 | Oats |
| 4 | Other Grain |
| 5 | Flour and Meal |
| 6 | Other Mill Products |
| 7 | Hay, Straw and Alfalfa |
| 8 | Tobacco |
| 9 | Cotton |
| 10 | Cotton Seed and Products, except Oil |
| 11 | Citrus Fruits |
| 12 | Other Fresh Fruits |
| 13 | Potatoes |
| 14 | Other Fresh Vegetables |
| 15 | Dried Fruits and Vegetables |
| 16 | Other Products of Agriculture |
| 17 | Horses and Mules |
| 18 | Cattle and Calves |
| 19 | Sheep and Goats |
| 20 | Hogs |
| 21 | Fresh Meats |
| 22 | Other Packing-House Products |
| 23 | Poultry |
| 24 | Eggs |
| 25 | Butter and Cheese |
| 26 | Wool |
| 27 | Hides and Leather |
| 28 | Other Products of Animals |
| 29 | Anthracite Coal |
| 30 | Bituminous Coal |
| 31 | Coke |
| 32 | Iron Ore |
| 33 | Other Ores and Concentrates |
| 34 | Base Bullion and Matte |
| 35 | Clay, Gravel, Sand and Stone |
| 36 | Crude Petroleum |
| 37 | Asphaltum |
| 38 | Salt |
| 39 | Other Products of Mines |
| 40 | Logs, Posts, Poles and Cordwood |
| 41 | Ties |
| 42 | Pulp Wood |
| 43 | Lumber, Timber, Box Shooks, Staves and Headings |
| 44 | Other Products of Forests |
| 45 | Refined Petroleum and its Products |
| 46 | Vegetable Oils |
| 47 | Sugar, Sirup, Glucose and Molasses |
| 48 | Boats and Vessel Supplies |
| 49 | Iron, pig and bloom |
| 50 | Rails and Fastenings |
| 51 | Bar and Sheet Iron, Structural Iron and Iron Pipe |
| 52 | Other Metals, pig, bar, and sheet |
| 53 | Castings, Machinery and Boilers |
| 54 | Cement |
| 55 | Brick and Artificial Stone |
| 56 | Lime and Plaster |
| 57 | Sewer Pipe and Drain Tile |
| 58 | Agricultural Implements and Vehicles other than Automobiles |
| 59 | Automobiles and Autotrucks |
| 60 | Household Goods and Second-hand Furniture |
| 61 | Furniture (new) |
| 62 | Beverages |
| 63 | Ice |
| 64 | Fertilizers (all kinds) |
| 65 | Paper, Printed Matter and Books |
| 66 | Chemicals and Explosives |
| 67 | Textiles |
| 68 | Canned Goods (all canned food products) |
| 69 | Other Manufactures and Miscellaneous |

## SECTION I. DESCRIPTION OF UNDERLYING SURVEYS

Analysis 1.10 Reconciliation between Freight Traffic Report Commodity Groups, Rail Carrier Inquiry Commodity Groups, Shippers' Inquiry Business Groups and I.C.C. former and present Freight Commodity Classes

| FREIGHT TRAFFIC REPORT COMMODITY GROUPS | | RAIL CARRIER INQUIRY | SHIPPERS' INQUIRY BUSINESS | I.C.C. FREIGHT COMMODITY CLASSES | |
|---|---|---|---|---|---|
| NO. | NAME | GROUP NO. | GROUP NO. | (1920-1927) | (PRESENT) |
| | I ROUGH MATERIAL | | | | |
| 10 | Sand, Stone and Gravel | 10* | 08*,34 | 35* | 350,351,352 |
| 11 | Timber | 13* | 08*,29* | 40*,41,42,44* | 400,401,410,420,443* |
| 12 | Rough Vegetables | 01* | 16* | 16* | 163 |
| 19 | Miscellaneous | 24* | 40* | 69* | 701* |
| | II RAW MATERIAL | | | | |
| 20 | Grain | 01*,02*,05*,14* | 10*,35* | 1,2,3,4,10*,16* | 10,20,30,40,41,42,100,162,164* |
| 21 | Animal Feeds | 02*,05*,14* | 10*,27*,35*,39* | 6*,10*,16*,28* | 61,101,160,164*,282* |
| 22 | Fresh Vegetables | 04* | 16* | 11,12,14* | 110,111,120,121,122,123,124,125,126, 127,128,142,143 |
| 23 | Live Animals | 06* | 22 | 17,18,19,20,23*, 28* | 170,180,181,190,191,200,201,230,281 |
| 24 | Dry Fuels | 08,13* | 12 | 29,30,31,40* | 290,300,310,402 |
| 25 | Crude Liquids | 12* | 30* | 36,45* | 360,451 |
| 26 | Ores | 09,11* | 11*,26 | 32,33,39* | 320,330,331,332,333,391,392 |
| 27 | Lumber | 13*,17* | 03,08* | 43,44*,69* | 430,431,432,443*,697 |
| 28 | Fertilizer | 05*,11* | 11*,27* | 28*,39*,64 | 282*,390,640 |
| 29 | Miscellaneous | 24* | 40* | 69* | 701* |
| | III SEMIPROCESSED MATERIAL | | | | |
| 30 | Primary Metals | 15*,16* | 20*,24* | 49,52* | 490,491,520,522,523 |
| 31 | Fibres | 03,05*,06*,13* | 08*,10*,13,35*, 37*,38* | 7,8,9,16*,26,44* | 70,71,80,90,91,164*,260,443* |
| 32 | Hides | 05*,06* | 21*,27* | 27*,28* | 270,282* |
| 33 | Primary Rubber | 13* | 33* | 44* | 442 |
| 34 | Salt | 19* | 18* | 38 | 380 |
| 35 | Ice | 19* | 40* | 63 | 630 |
| 36 | Primary Paper | 20* | 29* | 65*,69* | 650,694 |
| 37 | Horticultural | 05* | 35* | 16* | 164* |
| 38 | Scrap | 05*,13*,15* | 08*,20*,27*,35* | 16*,28*,44*,69* | 164*,282,443*,692,693 |
| 39 | Miscellaneous | 24* | 40* | 69* | 701* |
| | IV NECESSARIES | | | | |
| 40 | Dry Vegetables | 04*,05* | 16*,35* | 13,14*,15*,16* | 130,140,141,150,151,152,161,164* |
| 41 | Edible Liquids | 05*,14*,19* | 04,27*,36*,39*, 40* | 28*,46*,47*,62 | 380,382*,460,462,471,472,620 |
| 42 | Edible Animal Products | 05*,07 | 27* | 21,22,23*,24,25 28* | 210,220,221,222,231,240,250,251,282* |
| 43 | Manufactured Foods | 05*,19*,24* | 02,09,35*,36 | 16*,47*,68,69* | 164*,470,680,701* |
| 44 | Processed Cereals | 02* | 10*,18* | 5,6* | 50,51,52,60 |
| 45 | Furnishings | 17*,23*,24* | 17,18*,31 | 61,69* | 610,611,700,701* |
| 46 | Textiles and Leather | 05*,22 | 21*,27*,37* | 27*,28*,67 | 271,282*,670,671 |
| 47 | Clothing | 24* | 07,15 | 69* | 701* |
| 49 | Miscellaneous | 24* | 40* | 69* | 701* |
| | V AUXILIARIES | | | | |
| 50 | Masonry | 10*,18,20*,23* | 08*,29* | 35*,54,55,56,57, 69* | 353,540,550,551,552,560,561,570,665, 696,699 |
| 51 | Power | 12* | 30* | 45* | 450 |
| 52 | Lubricants | 12* | 30* | 45* | 452 |
| 53 | Kindlers | 24* | 40* | 69* | 701* |
| 54 | Preservatives | 12*,14*,21* | 28,30*,39* | 37,44*,45*,46*,69* | 370,440,441,453,461,691 |
| 55 | Chemicals, in tanks | 11*,21* | 11* | 66* | 660,661 |
| 56 | Chemicals, packaged | 05* | 27* | 28* | 282* |
| 57 | Cleansers and Adhesives | 05*,24* | 18*,27* | 28*,69* | 282*,698 |
| 58 | Explosives | 21* | 40* | 66* | 662 |
| 59 | Miscellaneous | 24* | 40* | 69* | 701* |
| | VI ACCESSORIES | | | | |
| 60 | Ferrous Metal | 15* | 19,20* | 50,51 | 500,510,511,512,513 |
| 61 | Non-ferrous Metals | 16* | 24* | 52* | 521 |
| 62 | Rubber | 17* | 33* | 59* | 593 |
| 63 | Tools and Appliances | 17*,24* | 20*,23*,40* | 53*,58*,69* | 530*,580*,701* |
| 64 | Machinery and Parts | 17* | 23* | 53*,58* | 530*,580* |
| 65 | Vehicles and Parts | 15*,17* | 01,23* | 58*,59* | 581,582,583,590,591,592 |
| 66 | Stationery, printing | 20* | 29* | 65* | 651 |
| 67 | Personal | 24* | 38* | 69* | 690 |
| 68 | Amusement | 24* | 25 | 69* | 701* |
| 69 | Miscellaneous | 24* | 05,06,14,32 | 48,69* | 701* |

* Indicates that commodity group number is also shown on one or more other lines in the same column because the specific commodities included in such group are assigned to two or more Freight Traffic Report Commodity Groups. For detailed reconciliation see the appendix.



## SECTION 3. TYPICALITY OF 1932 STATISTICS

Analysis 3.1 Chronological Indices of the Extent of Rail Operations

| | BASE YEAR | | PERCENTAGE RELATIONSHIP TO 1932 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1932 AGGREGATE | 12 YEAR AVERAGE | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 |
| AGGREGATE STATISTICS | | | | | | | | | | | | | |
| Reporting Carriers | 160* | 166 | 178 | 179 | 175 | 174 | 172 | 167 | 169 | 162 | 156 | 155 | 150 |
| Route Miles | 242,821 | 99 | 97 | 98 | 98 | 98 | 98 | 99 | 100 | 100 | 100 | 100 | 99 |
| Schedules (Thousands)# | 5,333 | - | - | - | - | - | - | - | - | - | - | - | - |
| Schedule Miles (Millions) | 391 | 142 | 142 | 164 | 154 | 157 | 162 | 156 | 154 | 157 | 138 | 119 | 101 |
| Schedule Hours (Thousands) | 24,407 | 175 | 199 | 234 | 207 | 206 | 210 | 196 | 185 | 184 | 154 | 125 | 99 |
| Vehicles Originated (Thousands) | 27,147 | 158 | 152 | 177 | 170 | 178 | 185 | 179 | 180 | 184 | 161 | 131 | 102 |
| Tons Originated (Millions) | 646 | 139 | 158 | 198 | 184 | 193 | 207 | 198 | 199 | 207 | 178 | 138 | 108 |
| Locomotive Miles (Millions) | 398 | 147 | 148 | 171 | 160 | 163 | 169 | 162 | 160 | 163 | 142 | 121 | 100 |
| Vehicle Miles (Millions) | | | | | | | | | | | | | |
| Total | 17,066 | 142 | 116 | 146 | 143 | 153 | 163 | 162 | 166 | 170 | 151 | 127 | 103 |
| Loaded | 10,333 | 148 | 134 | 158 | 153 | 163 | 171 | 168 | 172 | 176 | 152 | 127 | 103 |
| Empty | 6,733 | 133 | 101 | 127 | 127 | 138 | 151 | 153 | 156 | 161 | 148 | 127 | 102 |
| Ton Miles (Billions) | | | | | | | | | | | | | |
| Gross℘ | 747 | 143 | 122 | 148 | 143 | 153 | 164 | 163 | 165 | 171 | 151 | 127 | 104 |
| Vehicle | 648 | 144 | 124 | 150 | 143 | 156 | 167 | 165 | 168 | 174 | 153 | 128 | 104 |
| Net (r) | 236 | 160 | 145 | 176 | 166 | 177 | 190 | 183 | 185 | 191 | 164 | 132 | 107 |
| Equated | 456 | 154 | 142 | 172 | 163 | 171 | 181 | 175 | 174 | 181 | 156 | 127 | 103 |
| AVERAGE STATISTICS | | | | | | | | | | | | | |
| Density per Route Miles | | | | | | | | | | | | | |
| Schedule Miles | 1,610 | 147 | 150 | 174 | 162 | 165 | 171 | 163 | 160 | 162 | 141 | 121 | 101 |
| Locomotive Miles | 1,637 | 148 | 152 | 176 | 164 | 166 | 172 | 164 | 160 | 162 | 141 | 121 | 101 |
| Vehicle Miles - Loaded | 42,554 | 150 | 138 | 162 | 157 | 166 | 175 | 170 | 172 | 175 | 152 | 127 | 104 |
| Gross Ton Miles (Thousands) | 3,075 | 144 | 126 | 152 | 147 | 156 | 167 | 164 | 166 | 170 | 150 | 126 | 105 |
| Vehicle Ton Miles (Thousands) | 2,670 | 146 | 127 | 154 | 149 | 159 | 170 | 167 | 169 | 173 | 153 | 127 | 105 |
| Net Ton Miles (Thousands) (r) | 970 | 162 | 150 | 181 | 170 | 181 | 194 | 186 | 186 | 191 | 164 | 132 | 108 |
| Equated Ton Miles (Thousands) | 1,877 | 156 | 147 | 178 | 168 | 175 | 185 | 178 | 175 | 181 | 156 | 127 | 104 |
| Density per Schedule Mile | | | | | | | | | | | | | |
| Locomotive Miles | 1 | 100 | 101 | 101 | 101 | 101 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Vehicle Miles - Loaded | 26 | 102 | 92 | 93 | 96 | 100 | 102 | 104 | 108 | 109 | 107 | 105 | 103 |
| Gross Ton Miles | 1,910 | 98 | 84 | 88 | 90 | 94 | 98 | 101 | 104 | 105 | 106 | 105 | 104 |
| Vehicle Ton Miles | 1,660 | 100 | 85 | 89 | 91 | 96 | 100 | 102 | 106 | 107 | 108 | 106 | 104 |
| Net Ton Miles - Revenue | 600 | 110 | 99 | 104 | 105 | 109 | 113 | 113 | 116 | 118 | 116 | 109 | 107 |
| Equated Ton Miles | 1,170 | 105 | 98 | 102 | 103 | 106 | 108 | 109 | 109 | 111 | 110 | 105 | 103 |
| Density per Vehicle Mile - Loaded | | | | | | | | | | | | | |
| Gross Ton Miles | 72 | 96 | 91 | 95 | 94 | 94 | 96 | 97 | 96 | 97 | 102 | 100 | 101 |
| Vehicle Ton Miles | 63 | 98 | 92 | 96 | 95 | 96 | 98 | 98 | 98 | 99 | 104 | 100 | 101 |
| Net Ton Miles - Revenue | 23 | 108 | 108 | 113 | 108 | 109 | 111 | 109 | 108 | 109 | 111 | 104 | 103 |
| Equated Ton Miles | 44 | 104 | 106 | 111 | 107 | 105 | 106 | 104 | 101 | 103 | 106 | 100 | 100 |
| Density per Schedule Hour | | | | | | | | | | | | | |
| Gross Ton Miles | 30,600 | 81 | 62 | 64 | 69 | 74 | 78 | 83 | 89 | 93 | 98 | 102 | 105 |
| Vehicle Ton Miles | 26,570 | 86 | 62 | 64 | 70 | 76 | 79 | 84 | 91 | 94 | 99 | 102 | 105 |
| Net Ton Miles - Revenue | 9,650 | 91 | 73 | 76 | 80 | 86 | 90 | 93 | 100 | 103 | 106 | 106 | 107 |
| Equated Ton Miles | 18,670 | 90 | 72 | 74 | 79 | 83 | 86 | 89 | 94 | 98 | 101 | 102 | 104 |

* In 1932 the 160 reporting carriers were grouped into 111 systems.
\# Trains.
℘ Including locomotive.
(r) Revenue only.

SECTION 3. TYPICALITY OF 1932 STATISTICS

Analysis 3.2 Chronological Indices of Rail Freight Service Income

| | BASE YEAR | | PERCENTAGE RELATIONSHIP TO 1932 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1932 | 12 YEAR AVER- | | | | | | | | | | | |
| | AGGREGATE (000) | AGE | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 |
| REVENUE* | | | | | | | | | | | | | |
| Freight - Total | $2,442,881 | 166 | 163 | 188 | 177 | 186 | 196 | 189 | 191 | 197 | 167 | 133 | 102 |
| Rough Material | 62,354 | 202 | - | - | - | - | - | - | 301 | 296 | 256 | 174 | 88 |
| Raw Material | 1,202,727 | 142 | - | - | - | - | - | - | 181 | 184 | 158 | 129 | 129 |
| Semiprocessed Material | 110,376 | 153 | - | - | - | - | - | - | 201 | 210 | 170 | 129 | 109 |
| Necessaries | 291,454 | 121 | - | - | - | - | - | - | 136 | 137 | 130 | 120 | 104 |
| Auxiliaries | 481,104 | 142 | - | - | - | - | - | - | 176 | 184 | 162 | 132 | 99 |
| Accessories | 129,282 | 246 | - | - | - | - | - | - | 375 | 410 | 284 | 180 | 127 |
| L.C.L. | 252,427 | 151 | - | - | - | - | - | - | 203 | 204 | 170 | 135 | 91 |
| Adjustment# (Dr.) | 86,843 | 138 | - | - | - | - | - | - | 172 | 174 | 151 | 127 | 104 |
| Switching | 66,501 | 163 | 152 | 172 | 163 | 178 | 196 | 189 | 198 | 203 | 167 | 132 | 110 |
| Other | 49,999 | 119 | 82 | 90 | 92 | 90 | 90 | 152 | 142 | 194 | 164 | 133 | 97 |
| Total Revenues | $2,559,380 | 165 | 161 | 186 | 175 | 184 | 194 | 189 | 191 | 197 | 167 | 133 | 102 |
| EXPENSES | | | | | | | | | | | | | |
| Maintenance | $ 785,184 | 183 | 196 | 231 | 206 | 209 | 218 | 211 | 204 | 211 | 176 | 139 | 97 |
| Roadway | 228,146 | 206 | 208 | 239 | 231 | 238 | 254 | 254 | 246 | 251 | 203 | 152 | 94 |
| Power | 204,532 | 187 | 201 | 253 | 215 | 215 | 223 | 213 | 201 | 206 | 173 | 137 | 100 |
| Structures | 12,175 | 241 | 231 | 305 | 287 | 289 | 300 | 284 | 286 | 296 | 242 | 161 | 100 |
| Locomotives | 192,357 | 183 | 199 | 250 | 210 | 211 | 218 | 208 | 196 | 169 | 169 | 136 | 100 |
| Cars | 338,750 | 165 | 185 | 212 | 183 | 185 | 189 | 179 | 175 | 184 | 158 | 129 | 98 |
| Owned | 252,048 | 186 | 223 | 253 | 213 | 214 | 218 | 203 | 196 | 207 | 170 | 133 | 97 |
| Hired | 86,702 | 100 | 68 | 86 | 88 | 95 | 99 | 105 | 110 | 114 | 119 | 118 | 100 |
| Station | 9,334 | 220 | 206 | 257 | 243 | 246 | 278 | 285 | 264 | 283 | 231 | 160 | 92 |
| Wharves and Docks | 4,422 | 192 | 185 | 221 | 205 | 224 | 238 | 259 | 199 | 219 | 193 | 199 | 102 |
| Transportation | $ 809,406 | 172 | 192 | 213 | 195 | 194 | 200 | 195 | 189 | 191 | 166 | 136 | 95 |
| Train | 342,712 | 183 | 221 | 243 | 213 | 209 | 213 | 204 | 196 | 195 | 167 | 136 | 98 |
| Movement | 339,881 | 183 | 221 | 243 | 213 | 209 | 213 | 204 | 196 | 195 | 167 | 136 | 98 |
| Supplies | 2,831 | 138 | 123 | 133 | 140 | 137 | 151 | 154 | 158 | 172 | 160 | 136 | 96 |
| Assemblage | 299,497 | 167 | 170 | 196 | 183 | 185 | 195 | 192 | 187 | 194 | 169 | 136 | 94 |
| Movement | 270,513 | 170 | 175 | 202 | 187 | 190 | 200 | 196 | 190 | 196 | 169 | 137 | 94 |
| Supplies | 28,984 | 138 | 123 | 133 | 140 | 137 | 151 | 154 | 158 | 172 | 160 | 136 | 96 |
| Floatage | 12,026 | 169 | 165 | 183 | 180 | 190 | 202 | 198 | 195 | 202 | 177 | 143 | 94 |
| Station Agency | 155,171 | 160 | 172 | 185 | 180 | 180 | 183 | 180 | 176 | 176 | 158 | 134 | 90 |
| Other Operations | $ 5,889 | 205 | 224 | 275 | 243 | 259 | 246 | 240 | 241 | 216 | 175 | 145 | 94 |
| Water Operations | 3,051 | 241 | 289 | 357 | 326 | 306 | 299 | 295 | 271 | 248 | 198 | 156 | 90 |
| Miscellaneous | 2,838 | 180 | 182 | 222 | 190 | 229 | 212 | 205 | 222 | 196 | 164 | 138 | 97 |
| Overhead | $ 389,849 | 120 | 105 | 116 | 117 | 124 | 133 | 133 | 136 | 140 | 128 | 115 | 92 |
| Administration | 178,085 | 111 | 96 | 102 | 105 | 110 | 117 | 122 | 123 | 127 | 125 | 118 | 92 |
| Traffic | 63,238 | 106 | 87 | 92 | 95 | 101 | 107 | 114 | 119 | 124 | 124 | 119 | 90 |
| General | 114,847 | 114 | 102 | 108 | 111 | 116 | 122 | 126 | 124 | 128 | 125 | 118 | 93 |
| Loss and Damage Freight | 18,459 | 178 | 231 | 210 | 198 | 213 | 198 | 196 | 192 | 206 | 180 | 132 | 83 |
| Taxes | 193,305 | 128 | 114 | 128 | 128 | 136 | 148 | 142 | 148 | 151 | 130 | 112 | 93 |
| TOTAL EXPENSES | $1,990,328 | 166 | 177 | 202 | 185 | 187 | 195 | 190 | 185 | 189 | 163 | 133 | 93 |
| NET RESULTS | P $ 569,052 | 161 | 104 | 128 | 141 | 171 | 191 | 184 | 211 | 225 | 180 | 132 | 125 |

* Detailed information as to commodity classification was not available for the years 1922 to 1927 inclusive. Indices in 12 year average column for freight are based on 6 years.
\# To adjust for differences between I.C.C. Commodity statistics and I.C.C. Account 101.
Source - Figures in Base Year - 1932 column - cover reporting roads only.



Analysis 3.3 Chronological Indices of Rail-Revenue per Net Ton Mile of Commodity Groups - Carload Traffic Only

| RATING GROUP / COMMODITY GROUP | REVENUE 1932 (000) | REVENUE PER NET TON MILE ( MILLS) 6 YEAR AVER- AGE | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1934/ |
|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | $2,280,897 | 10.45 | 10.71 | 10.60 | 10.43 | 10.41 | 10.38 | 9.97 | 9.65 |
| I ROUGH MATERIAL | $ 62,453 | 10.39 | 10.27 | 10.38 | 10.51 | 10.71 | 10.80 | 9.47 | 9.36 |
| 10 Sand, Stone, Gravel | 40,325 | 11.25 | 11.54 | 11.46 | 11.23 | 11.07 | 10.98 | 10.48 | 9.94 |
| 11 Timber | 18,666 | 9.00 | 8.56 | 8.98 | 9.30 | 9.76 | 10.07 | 7.98 | 8.31 |
| 12 Rough Vegetables | 3,462 | 13.78 | 14.31 | 14.06 | 14.47 | 13.75 | 13.49 | 12.76 | 13.83 |
| 19 Miscellaneous* | - | - | - | - | - | - | - | - | - |
| II RAW MATERIAL | $1,204,628 | 8.55 | 8.78 | 8.57 | 8.51 | 8.43 | 8.58 | 8.17 | 7.79 |
| 20 Grain | 120,910 | 12.31 | 13.42 | 13.07 | 13.18 | 12.23 | 10.91 | 10.78 | 10.56 |
| 21 Animal Feeds | 27,803 | 8.38 | 8.87 | 8.63 | 8.26 | 8.15 | 8.19 | 7.85 | 7.45 |
| 22 Fresh Vegetables | 184,383 | 13.14 | 12.97 | 13.08 | 13.21 | 12.98 | 13.64 | 13.04 | 12.59 |
| 23 Live Animals | 75,656 | 15.86 | 15.39 | 15.20 | 15.43 | 16.41 | 16.54 | 16.70 | 17.12 |
| 24 Dry Fuels | 618,612 | 6.92 | 7.13 | 7.03 | 6.91 | 6.79 | 6.89 | 6.64 | 6.26 |
| 25 Crude Liquids | 36,190 | 11.65 | 11.22 | 12.66 | 12.17 | 10.55 | 10.62 | 9.67 | 9.79 |
| 26 Ores | 39,306 | 7.23 | 7.06 | 7.02 | 7.10 | 7.19 | 8.95 | 7.78 | 7.23 |
| 27 Lumber | 82,545 | 9.73 | 9.78 | 9.77 | 9.79 | 9.62 | 9.68 | 9.59 | 9.17 |
| 28 Fertilizer | 19,223 | 10.86 | 11.39 | 10.92 | 10.71 | 10.60 | 10.63 | 10.62 | 9.81 |
| 29 Miscellaneous* | - | - | - | - | - | - | - | - | - |
| III SEMIPROCESSED MATERIAL | $ 110,550 | 12.98 | 12.89 | 12.91 | 12.61 | 13.45 | 13.93 | 12.58 | 16.81 |
| 30 Primary Metals | 10,050 | 7.87 | 7.77 | 7.98 | 7.87 | 8.17 | 8.53 | 7.02 | 6.90 |
| 31 Fibres | 43,537 | 17.89 | 18.85 | 19.04 | 18.22 | 18.35 | 16.57 | 15.00 | 13.43 |
| 32 Hides | 5,324 | 14.38 | 14.70 | 14.48 | 14.20 | 14.10 | 14.23 | 14.55 | 14.00 |
| 33 Rubber | 2,772 | 14.01 | 15.62 | 14.98 | 14.06 | 13.14 | 13.30 | 12.45 | 11.87 |
| 34 Salt | 13,788 | 11.62 | 11.29 | 11.54 | 11.61 | 11.39 | 12.04 | 11.94 | 10.88 |
| 35 Ice | 1,671 | 23.09 | 23.80 | 23.31 | 22.61 | 23.09 | 22.65 | 21.53 | 22.17 |
| 36 Primary Paper | 19,002 | 15.42 | 15.55 | 16.07 | 15.02 | 14.86 | 15.70 | 15.35 | 15.88 |
| 37 Horticultural | 1,957 | 12.78 | 13.96 | 12.91 | 12.43 | 12.92 | 12.48 | 11.87 | 11.02 |
| 38 Scrap | 12,450 | 11.12 | 11.22 | 11.12 | 9.62 | 11.45 | 12.99 | 12.84 | 12.25 |
| 39 Miscellaneous* | - | - | - | - | - | - | - | - | - |
| IV NECESSARIES | $ 291,915 | 12.98 | 13.32 | 13.21 | 13.01 | 13.02 | 12.64 | 12.46 | 12.29 |
| 40 Dry Vegetables | 59,131 | 13.44 | 13.57 | 13.41 | 13.62 | 14.05 | 12.85 | 12.92 | 13.79 |
| 41 Edible Liquids | 16,694 | 10.64 | 10.81 | 10.75 | 10.09 | 9.94 | 10.48 | 11.65 | 12.16 |
| 42 Edible Animal Products | 97,005 | 16.62 | 16.30 | 16.16 | 16.46 | 16.94 | 17.28 | 16.75 | 15.74 |
| 43 Manufactured Foods | 54,764 | 13.60 | 14.35 | 14.05 | 13.89 | 13.60 | 13.06 | 12.12 | 11.35 |
| 44 Processed Cereals | 41,430 | 7.87 | 8.40 | 8.27 | 8.11 | 7.75 | 7.24 | 7.27 | 7.16 |
| 45 Furnishings | 15,149 | 16.95 | 18.61 | 18.40 | 16.58 | 15.93 | 16.32 | 14.50 | 14.10 |
| 46 Textiles and Leather | 7,743 | 17.23 | 17.30 | 17.02 | 16.97 | 16.55 | 17.75 | 18.06 | 16.99 |
| 47 Clothing* | - | - | - | - | - | - | - | - | - |
| 49 Miscellaneous* | - | - | - | - | - | - | - | - | - |
| V AUXILIARIES | $ 481,864 | 13.61 | 13.44 | 13.60 | 13.62 | 13.74 | 13.87 | 13.50 | 12.85 |
| 50 Masonry | 69,821 | 11.25 | 10.91 | 11.01 | 10.97 | 11.32 | 12.38 | 12.34 | 11.56 |
| 51 Power | 192,065 | 16.06 | 16.88 | 16.74 | 16.41 | 16.17 | 15.25 | 14.41 | 13.52 |
| 52 Lubricants | 15,648 | 12.75 | 12.78 | 13.19 | 12.92 | 12.46 | 12.47 | 12.59 | 12.64 |
| 53 Kindlers* | - | - | - | - | - | - | - | - | - |
| 54 Preservatives | 14,964 | 13.30 | 14.38 | 13.95 | 13.08 | 12.81 | 12.50 | 12.44 | 12.22 |
| 55 Chemicals, in tanks | 4,685 | 14.74 | 14.68 | 15.13 | 14.71 | 14.40 | 14.74 | 14.67 | 14.39 |
| 56 Chemicals, packaged | 797 | 16.37 | 17.00 | 16.54 | 15.70 | 15.87 | 16.69 | 16.67 | 14.41 |
| 57 Cleansers and Adhesives | 7,208 | 14.88 | 15.33 | 15.24 | 15.11 | 15.08 | 14.94 | 13.14 | 12.83 |
| 58 Explosives | 2,475 | 36.88 | 36.64 | 38.02 | 37.35 | 36.06 | 37.84 | 34.05 | 30.62 |
| 59 Miscellaneous# | 174,201 | 13.00 | 12.83 | 12.99 | 12.95 | 12.96 | 13.26 | 13.21 | 12.74 |
| VI ACCESSORIES | $ 129,486 | 17.31 | 18.16 | 17.62 | 16.86 | 16.71 | 16.79 | 16.29 | 16.32 |
| 60 Ferrous Metals | 61,677 | 14.01 | 13.85 | 13.90 | 14.22 | 14.18 | 14.45 | 13.80 | 13.49 |
| 61 Nonferrous Metals | 694 | 23.98 | 27.92 | 26.47 | 22.05 | 19.23 | 24.14 | 20.65 | 17.43 |
| 62 Rubber | 3,630 | 18.52 | 18.31 | 18.59 | 20.07 | 20.20 | 17.96 | 14.64 | 11.83 |
| 63 Tools and Appliances | - | - | - | - | - | - | - | - | - |
| 64 Machinery and Parts | 12,802 | 17.32 | 17.21 | 17.48 | 17.43 | 16.94 | 17.38 | 17.22 | 16.56 |
| 65 Vehicles and Parts | 39,699 | 26.40 | 30.44 | 26.81 | 23.96 | 24.03 | 24.05 | 24.20 | 23.57 |
| 66 Stationery, Printing | 7,497 | 11.19 | 10.94 | 11.03 | 11.10 | 11.22 | 11.77 | 11.38 | 11.12 |
| 67 Personal | 3,487 | 16.31 | 13.25 | 15.81 | 16.98 | 17.75 | 18.24 | 16.66 | 16.76 |
| 68 Amusement* | - | - | - | - | - | - | - | - | - |
| 69 Miscellaneous* | - | - | - | - | - | - | - | - | - |

* Included in No. 59.
\# Includes all Miscellaneous Manufactures, I.C.C. Commodity Group 701.
/ Not included in 6 year average; fourth quarter 1934 estimated.
Source - I.C.C. Commodity Statistics.

SECTION 3. TYPICALITY OF 1932 STATISTICS

Analysis 3.4 Chronological Indices of Rail Maintenance Unit Costs

| FACILITY / UNIT | BASE YEAR 1932 AGGREGATE | 12 YEAR AVERAGE | PERCENTAGE RELATIONSHIP TO 1932 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ROADWAY** | $ 228,146* | | | | | | | | | | | | |
| Revenue Ratio | 69.01% | 125 | 129 | 128 | 132 | 130 | 139 | 135 | 129 | 127 | 122 | 115 | 92 |
| Route Mile | $ 939.56 | 208 | 214 | 215 | 236 | 242 | 299 | 257 | 247 | 250 | 202 | 152 | 95 |
| Schedule | 43.33 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 8.41 | 130 | 137 | 135 | 135 | 133 | 137 | 142 | 137 | 136 | 126 | 116 | 92 |
| Net Ton (revenue) | $ .3530 | 148 | 131 | 121 | 126 | 123 | 123 | 128 | 124 | 217 | 114 | 110 | 87 |
| Schedule Hour | 9.3476 | 118 | 105 | 102 | 111 | 115 | 121 | 130 | 133 | 136 | 131 | 122 | 94 |
| Schedule Mile | .5834 | 141 | 142 | 141 | 145 | 147 | 152 | 158 | 154 | 155 | 143 | 126 | 94 |
| Vehicle Mile | .0221 | 139 | 155 | 153 | 150 | 146 | 148 | 151 | 143 | 142 | 137 | 119 | 84 |
| Gross Ton Mile | $ .00306 | 144 | 170 | 161 | 161 | 155 | 154 | 157 | 149 | 146 | 134 | 120 | 90 |
| Net Ton Mile | .00968 | 129 | 143 | 135 | 139 | 134 | 134 | 139 | 121 | 131 | 124 | 115 | 88 |
| Equated Ton Mile | .00501 | 131 | 146 | 138 | 141 | 139 | 141 | 145 | 142 | 139 | 130 | 120 | 91 |
| **STATION** | $ 9,334* | | | | | | | | | | | | |
| Revenue Ratio | .37% | 132 | 127 | 138 | 138 | 132 | 151 | 149 | 138 | 143 | 138 | 119 | 89 |
| Route Mile | $ 38.44 | 223 | 212 | 263 | 249 | 251 | 283 | 289 | 265 | 282 | 230 | 160 | 93 |
| Schedule | 1.77 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | .34 | 139 | 136 | 145 | 143 | 138 | 150 | 159 | 147 | 153 | 143 | 122 | 90 |
| Net Ton (revenue) | $ .0114 | 158 | 130 | 129 | 132 | 127 | 134 | 143 | 132 | 244 | 129 | 116 | 85 |
| Schedule Hour | .3824 | 126 | 104 | 110 | 117 | 119 | 132 | 145 | 143 | 153 | 149 | 129 | 92 |
| Schedule Mile | .0239 | 151 | 142 | 152 | 153 | 152 | 166 | 177 | 166 | 175 | 163 | 133 | 92 |
| Vehicle Mile | .0009 | 244 | 256 | 267 | 256 | 256 | 267 | 267 | 256 | 267 | 256 | 222 | 189 |
| Gross Ton Mile | $ .00012 | 158 | 175 | 183 | 175 | 167 | 175 | 183 | 167 | 175 | 155 | 133 | 92 |
| Net Ton Mile | .00040 | 140 | 143 | 148 | 148 | 140 | 148 | 158 | 130 | 150 | 143 | 123 | 88 |
| Equated Ton Mile | .00020 | 146 | 145 | 145 | 145 | 140 | 150 | 160 | 150 | 155 | 145 | 125 | 90 |
| **WHARVES** | $ 4,422* | | | | | | | | | | | | |
| Revenue Ratio | .17% | 117 | 111 | 117 | 117 | 122 | 128 | 133 | 106 | 112 | 117 | 117 | 100 |
| Route Mile | $ 18.21 | 194 | 190 | 226 | 209 | 228 | 242 | 261 | 200 | 219 | 192 | 158 | 103 |
| Schedule | .84 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | .16 | 121 | 121 | 125 | 120 | 126 | 128 | 144 | 110 | 119 | 120 | 121 | 100 |
| Net Ton (revenue) | $ .0068 | 137 | 115 | 111 | 111 | 115 | 114 | 130 | 100 | 175 | 107 | 114 | 94 |
| Schedule Hour | .1812 | 110 | 93 | 95 | 99 | 108 | 113 | 132 | 107 | 119 | 125 | 127 | 103 |
| Schedule Mile | .0113 | 131 | 126 | 130 | 128 | 138 | 142 | 160 | 124 | 135 | 136 | 131 | 102 |
| Vehicle Mile | .0004 | 150 | 150 | 150 | 150 | 150 | 150 | 175 | 125 | 125 | 150 | 125 | 100 |
| Gross Ton Mile | $ .00006 | 135 | 152 | 150 | 143 | 147 | 145 | 160 | 122 | 128 | 128 | 127 | 98 |
| Net Ton Mile | .00019 | 100 | 125 | 120 | 120 | 125 | 120 | 140 | 105 | 110 | 115 | 115 | 95 |
| Equated Ton Mile | .00010 | 118 | 120 | 120 | 120 | 120 | 130 | 140 | 110 | 120 | 120 | 120 | 90 |
| **POWER** | $ 204,532* | | | | | | | | | | | | |
| Revenue Ratio | 8.08% | 113 | 125 | 136 | 123 | 117 | 121 | 113 | 106 | 105 | 104 | 103 | 99 |
| Route Mile | $ 842.32 | 188 | 206 | 260 | 220 | 220 | 227 | 215 | 202 | 206 | 169 | 137 | 101 |
| Schedule | 38.85 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 7.54 | 118 | 132 | 143 | 126 | 121 | 120 | 119 | 112 | 112 | 108 | 105 | 98 |
| Net Ton (revenue) | $ .3165 | 134 | 127 | 128 | 117 | 112 | 108 | 107 | 101 | 179 | 97 | 99 | 93 |
| Schedule Hour | 8.3800 | 107 | 101 | 108 | 104 | 104 | 106 | 108 | 108 | 112 | 112 | 110 | 101 |
| Schedule Mile | .5230 | 128 | 138 | 150 | 135 | 133 | 133 | 132 | 126 | 127 | 122 | 113 | 100 |
| Vehicle Mile | .0198 | 126 | 149 | 162 | 140 | 132 | 130 | 126 | 117 | 117 | 118 | 108 | 97 |
| Gross Ton Mile | $ .00274 | 135 | 169 | 177 | 155 | 145 | 140 | 135 | 126 | 125 | 119 | 112 | 100 |
| Net Ton Mile | .00868 | 117 | 139 | 144 | 130 | 122 | 118 | 116 | 99 | 108 | 106 | 104 | 94 |
| Equated Ton Mile | .00149 | 120 | 147 | 147 | 131 | 126 | 123 | 121 | 118 | 114 | 111 | 108 | 99 |
| **VEHICLES** | $ 338,750* | | | | | | | | | | | | |
| Revenue Ratio | 13.38% | 100 | 115 | 114 | 104 | 101 | 103 | 95 | 92 | 93 | 95 | 97 | 96 |
| Route Mile | $ 1,395.06 | 166 | 190 | 217 | 187 | 189 | 192 | 181 | 176 | 184 | 157 | 129 | 98 |
| Schedule | 64.34 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 12.48 | 104 | 121 | 120 | 107 | 104 | 102 | 100 | 97 | 100 | 98 | 99 | 96 |
| Net Ton (revenue) | $ .5242 | 118 | 117 | 107 | 99 | 96 | 91 | 90 | 88 | 89 | 88 | 93 | 90 |
| Schedule Hour | 13.8792 | 94 | 93 | 91 | 88 | 90 | 90 | 91 | 95 | 100 | 102 | 104 | 98 |
| Schedule Mile | .8663 | 113 | 127 | 125 | 115 | 114 | 113 | 111 | 110 | 114 | 112 | 107 | 98 |
| Vehicle Mile | .0328 | 111 | 138 | 135 | 119 | 114 | 110 | 106 | 102 | 105 | 107 | 102 | 94 |
| Gross Ton Mile | $ .00454 | 116 | 151 | 143 | 127 | 121 | 115 | 110 | 105 | 108 | 115 | 102 | 94 |
| Net Ton Mile | .01438 | 103 | 128 | 120 | 110 | 105 | 100 | 98 | 86 | 96 | 96 | 98 | 92 |
| Equated Ton Mile | .00743 | 107 | 130 | 123 | 112 | 108 | 104 | 102 | 101 | 102 | 101 | 102 | 95 |

* Thousands.



SECTION 3. TYPICALITY OF 1932 STATISTICS

Analysis 3.5 Chronological Indices of Rail Transportation Unit Costs

| FUNCTION / UNIT | BASE YEAR 1932 AGGREGATE | 12 YEAR AVERAGE | PERCENTAGE RELATIONSHIP TO 1932 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AGENCY** | $ 155,171* | | | | | | | | | | | | |
| Revenue Ratio | 6.13% | 97 | 107 | 100 | 103 | 98 | 94 | 96 | 92 | 90 | 95 | 101 | 88 |
| Route Mile | $ 639.03 | 161 | 176 | 189 | 184 | 184 | 186 | 182 | 176 | 176 | 158 | 134 | 90 |
| Schedule | 29.47 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 5.72 | 101 | 113 | 104 | 106 | 101 | 99 | 100 | 97 | 96 | 99 | 102 | 88 |
| Net Ton (revenue) | $ .2401 | 114 | 103 | 93 | 98 | 93 | 88 | 91 | 88 | 85 | 89 | 97 | 83 |
| Schedule Hour | 6.3576 | 91 | 87 | 79 | 87 | 87 | 87 | 92 | 95 | 96 | 103 | 108 | 90 |
| Schedule Mile | .3968 | 109 | 118 | 109 | 113 | 111 | 107 | 111 | 110 | 109 | 112 | 110 | 90 |
| Vehicle Mile | .0150 | 107 | 128 | 118 | 118 | 111 | 106 | 107 | 103 | 101 | 108 | 106 | 87 |
| Gross Ton Mile | $ .00208 | 112 | 141 | 125 | 126 | 118 | 111 | 111 | 107 | 104 | 105 | 107 | 86 |
| Net Ton Mile | .00659 | 100 | 118 | 105 | 108 | 102 | 96 | 98 | 95 | 92 | 97 | 102 | 84 |
| Equated Ton Mile | .00340 | 103 | 121 | 107 | 110 | 105 | 101 | 103 | 101 | 98 | 91 | 105 | 87 |
| **ASSEMBLAGE** | $ 299,497* | | | | | | | | | | | | |
| Revenue Ratio | 11.83% | 101 | 105 | 105 | 104 | 101 | 101 | 102 | 98 | 98 | 101 | 103 | 92 |
| Route Mile | $ 1,233.41 | 168 | 175 | 201 | 187 | 188 | 199 | 194 | 188 | 193 | 168 | 136 | 95 |
| Schedule | 56.88 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 11.04 | 105 | 112 | 111 | 107 | 104 | 105 | 107 | 104 | 105 | 105 | 104 | 92 |
| Net Ton (revenue) | $ .4635 | 120 | 102 | 99 | 99 | 96 | 94 | 97 | 94 | 93 | 94 | 99 | 87 |
| Schedule Hour | 12.2709 | 95 | 85 | 84 | 88 | 90 | 93 | 98 | 101 | 105 | 109 | 109 | 95 |
| Schedule Mile | .7659 | 114 | 116 | 116 | 115 | 114 | 116 | 119 | 118 | 120 | 119 | 113 | 94 |
| Vehicle Mile | .0290 | 113 | 126 | 125 | 119 | 114 | 114 | 114 | 109 | 110 | 114 | 107 | 91 |
| Gross Ton Mile | $ .00405 | 117 | 139 | 135 | 127 | 121 | 119 | 118 | 114 | 114 | 112 | 108 | 90 |
| Net Ton Mile | .01271 | 104 | 117 | 111 | 110 | 105 | 103 | 105 | 101 | 101 | 103 | 103 | 88 |
| Equated Ton Mile | .00657 | 107 | 119 | 113 | 112 | 108 | 108 | 109 | 108 | 107 | 96 | 107 | 91 |
| **TRAIN** | $ 342,712* | | | | | | | | | | | | |
| Revenue Ratio | 13.54% | 111 | 137 | 131 | 121 | 114 | 110 | 108 | 103 | 99 | 100 | 102 | 96 |
| Route Mile | $ 1,411.38 | 185 | 227 | 249 | 218 | 213 | 216 | 206 | 196 | 195 | 166 | 204 | 99 |
| Schedule | 65.09 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 12.63 | 115 | 145 | 137 | 125 | 117 | 115 | 114 | 109 | 106 | 104 | 103 | 96 |
| Net Ton (revenue) | $ .5303 | 131 | 132 | 123 | 116 | 108 | 103 | 103 | 98 | 94 | 94 | 98 | 91 |
| Schedule Hour | 14.0415 | 104 | 111 | 104 | 103 | 101 | 101 | 104 | 106 | 106 | 108 | 109 | 99 |
| Schedule Mile | .8764 | 125 | 151 | 143 | 134 | 129 | 127 | 126 | 123 | 120 | 118 | 112 | 98 |
| Vehicle Mile | .0332 | 123 | 164 | 155 | 139 | 128 | 124 | 121 | 114 | 111 | 113 | 107 | 95 |
| Gross Ton Mile | $ .00459 | 128 | 180 | 164 | 148 | 136 | 129 | 126 | 119 | 114 | 111 | 107 | 94 |
| Net Ton Mile | .01454 | 114 | 152 | 137 | 128 | 118 | 112 | 111 | 106 | 102 | 102 | 103 | 92 |
| Equated Ton Mile | .00752 | 117 | 155 | 140 | 130 | 122 | 117 | 116 | 113 | 108 | 95 | 107 | 91 |
| **FLOATAGE** | $ 12,026* | | | | | | | | | | | | |
| Revenue Ratio | .48% | 104 | 104 | 98 | 104 | 104 | 104 | 106 | 102 | 104 | 108 | 108 | 92 |
| Route Mile | $ 49.53 | 171 | 170 | 187 | 184 | 194 | 206 | 200 | 195 | 202 | 176 | 142 | 94 |
| Schedule | 2.28 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | .44 | 107 | 109 | 103 | 106 | 107 | 109 | 110 | 108 | 110 | 110 | 109 | 92 |
| Net Ton (revenue) | $ .0186 | 121 | 99 | 92 | 98 | 98 | 98 | 100 | 98 | 98 | 99 | 103 | 87 |
| Schedule Hour | .4927 | 97 | 83 | 78 | 87 | 92 | 96 | 101 | 105 | 110 | 115 | 114 | 94 |
| Schedule Mile | .0308 | 116 | 113 | 108 | 113 | 117 | 120 | 123 | 122 | 125 | 125 | 118 | 94 |
| Vehicle Mile | .0012 | 115 | 123 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 108 | 92 |
| Gross Ton Mile | $ .00016 | 117 | 133 | 122 | 122 | 122 | 122 | 122 | 116 | 116 | 116 | 120 | 89 |
| Net Ton Mile | .00051 | 107 | 114 | 105 | 109 | 109 | 107 | 109 | 105 | 107 | 109 | 109 | 88 |
| Equated Ton Mile | .00026 | 111 | 118 | 107 | 111 | 111 | 111 | 114 | 114 | 114 | 100 | 114 | 93 |

* Thousands.

## SECTION 3. TYPICALITY OF 1932 STATISTICS

### Analysis 3.6 Chronological Indices of Rail Overhead Unit Costs

| FUNCTION / UNIT | BASE YEAR 1932 AGGREGATE | BASE YEAR 12 YEAR AVERAGE | PERCENTAGE RELATIONSHIP TO 1932 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OVERHEAD ∮ | $ 389,849* | | | | | | | | | | | | |
| Revenue Ratio | 15.23% | 73 | 65 | 62 | 67 | 67 | 69 | 70 | 71 | 71 | 77 | 86 | 91 |
| Route Mile | $ 1,605.50 | 121 | 108 | 118 | 120 | 126 | 136 | 134 | 136 | 139 | 127 | 114 | 93 |
| Schedule | 73.10 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 14.38 | 76 | 69 | 65 | 69 | 69 | 72 | 74 | 75 | 76 | 79 | 88 | 90 |
| Net Ton (revenue) | $ .6033 | 86 | 67 | 58 | 64 | 64 | 64 | 67 | 68 | 67 | 72 | 83 | 85 |
| Schedule Hour | 15.9728 | 68 | 53 | 49 | 57 | 60 | 63 | 67 | 73 | 76 | 83 | 92 | 93 |
| Schedule Mile | .9969 | 82 | 72 | 68 | 74 | 76 | 80 | 82 | 85 | 86 | 90 | 95 | 92 |
| Vehicle Mile | .0377 | 80 | 78 | 74 | 77 | 76 | 78 | 79 | 79 | 79 | 87 | 90 | 89 |
| Gross Ton Mile | $ .00522 | 84 | 86 | 78 | 82 | 81 | 81 | 82 | 82 | 82 | 85 | 91 | 89 |
| Net Ton Mile | .01654 | 75 | 73 | 66 | 71 | 70 | 70 | 72 | 73 | 73 | 78 | 87 | 87 |
| Equated Ton Mile | .00855 | 77 | 74 | 67 | 72 | 72 | 74 | 76 | 78 | 77 | 74 | 90 | 89 |
| ADMINISTRATION | $ 178,085* | | | | | | | | | | | | |
| Revenue Ratio | 6.96% | 71 | 60 | 55 | 60 | 60 | 60 | 65 | 64 | 64 | 75 | 89 | 90 |
| Route Mile | $ 733.40 | 113 | 99 | 105 | 108 | 112 | 119 | 123 | 123 | 126 | 125 | 118 | 93 |
| Schedule | 33.40 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 6.58 | 70 | 63 | 58 | 62 | 62 | 63 | 68 | 70 | 69 | 78 | 90 | 90 |
| Net Ton (revenue) | $ .2756 | 80 | 61 | 52 | 57 | 57 | 57 | 61 | 62 | 61 | 70 | 85 | 85 |
| Schedule Hour | 7.2965 | 64 | 48 | 44 | 51 | 54 | 56 | 62 | 66 | 69 | 81 | 95 | 92 |
| Schedule Mile | .4554 | 76 | 66 | 60 | 66 | 68 | 70 | 75 | 77 | 78 | 88 | 98 | 92 |
| Vehicle Mile | .0172 | 75 | 72 | 66 | 69 | 68 | 68 | 72 | 71 | 72 | 84 | 93 | 89 |
| Gross Ton Mile | $ .00238 | 78 | 79 | 69 | 73 | 72 | 71 | 75 | 74 | 74 | 83 | 93 | 88 |
| Net Ton Mile | .00756 | 76 | 72 | 63 | 66 | 68 | 67 | 72 | 72 | 72 | 83 | 97 | 94 |
| Equated Ton Mile | .00391 | 72 | 68 | 59 | 64 | 64 | 64 | 69 | 71 | 70 | 71 | 93 | 90 |
| TRAFFIC | $ 63,238* | | | | | | | | | | | | |
| Revenue Ratio | 2.47% | 64 | 54 | 49 | 54 | 55 | 55 | 60 | 63 | 63 | 75 | 90 | 88 |
| Route Mile | $ 260.43 | 107 | 89 | 94 | 97 | 103 | 109 | 115 | 120 | 124 | 124 | 118 | 90 |
| Schedule | 11.86 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 2.33 | 67 | 57 | 52 | 56 | 57 | 58 | 64 | 66 | 67 | 77 | 91 | 88 |
| Net Ton (revenue) | $ .0979 | 76 | 55 | 46 | 52 | 52 | 52 | 57 | 60 | 60 | 70 | 86 | 83 |
| Schedule Hour | 2.5910 | 61 | 43 | 39 | 46 | 49 | 51 | 58 | 64 | 67 | 81 | 95 | 90 |
| Schedule Mile | .1617 | 73 | 59 | 54 | 60 | 62 | 64 | 71 | 75 | 76 | 88 | 98 | 90 |
| Vehicle Mile | .0061 | 72 | 66 | 59 | 62 | 62 | 64 | 69 | 70 | 70 | 85 | 93 | 87 |
| Gross Ton Mile | $ .00085 | 75 | 71 | 62 | 67 | 65 | 65 | 70 | 73 | 73 | 83 | 94 | 87 |
| Net Ton Mile | .00268 | 66 | 60 | 52 | 57 | 57 | 57 | 62 | 64 | 65 | 76 | 90 | 84 |
| Equated Ton Mile | .00139 | 68 | 61 | 53 | 58 | 59 | 60 | 65 | 69 | 69 | 71 | 93 | 87 |
| GENERAL | $ 114,847* | | | | | | | | | | | | |
| Revenue Ratio | 4.49% | 70 | 63 | 58 | 63 | 63 | 63 | 67 | 65 | 65 | 75 | 89 | 91 |
| Route Mile | $ 472.97 | 116 | 104 | 111 | 113 | 118 | 124 | 128 | 124 | 128 | 125 | 117 | 94 |
| Schedule | 21.54 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 4.24 | 72 | 67 | 61 | 65 | 65 | 66 | 70 | 69 | 70 | 78 | 90 | 91 |
| Net Ton (revenue) | $ .1777 | 82 | 64 | 54 | 60 | 60 | 59 | 64 | 62 | 62 | 70 | 85 | 86 |
| Schedule Hour | 4.7055 | 65 | 51 | 46 | 53 | 56 | 58 | 64 | 67 | 70 | 81 | 94 | 94 |
| Schedule Mile | .2937 | 78 | 70 | 64 | 70 | 71 | 73 | 78 | 78 | 79 | 88 | 97 | 93 |
| Vehicle Mile | .0111 | 84 | 84 | 69 | 72 | 71 | 71 | 74 | 72 | 73 | 85 | 92 | 94 |
| Gross Ton Mile | $ .00154 | 80 | 83 | 72 | 77 | 75 | 74 | 77 | 75 | 75 | 83 | 93 | 89 |
| Net Ton Mile | .00487 | 72 | 70 | 61 | 66 | 65 | 64 | 69 | 67 | 67 | 77 | 89 | 88 |
| Equated Ton Mile | .00252 | 74 | 72 | 62 | 67 | 67 | 67 | 72 | 72 | 71 | 72 | 93 | 90 |
| TAXES | $ 193,305* | | | | | | | | | | | | |
| Revenue Ratio | 7.55% | 77 | 70 | 69 | 73 | 74 | 76 | 76 | 77 | 77 | 78 | 84 | 91 |
| Route Mile | $ 796.08 | 129 | 117 | 131 | 131 | 139 | 151 | 144 | 148 | 151 | 130 | 111 | 93 |
| Schedule | 36.24 | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicle (loaded) | 7.13 | 81 | 75 | 72 | 75 | 76 | 80 | 79 | 82 | 82 | 81 | 85 | 91 |
| Net Ton (revenue) | $ .2991 | 91 | 72 | 65 | 70 | 70 | 72 | 72 | 74 | 73 | 73 | 81 | 86 |
| Schedule Hour | 7.9201 | 73 | 57 | 55 | 62 | 66 | 71 | 72 | 80 | 82 | 84 | 90 | 93 |
| Schedule Mile | .4943 | 87 | 78 | 75 | 81 | 84 | 89 | 88 | 93 | 93 | 92 | 92 | 93 |
| Vehicle Mile | .0187 | 86 | 84 | 82 | 84 | 83 | 86 | 85 | 86 | 86 | 88 | 88 | 90 |
| Gross Ton Mile | $ .00259 | 89 | 93 | 86 | 90 | 89 | 90 | 87 | 89 | 89 | 86 | 88 | 89 |
| Net Ton Mile | .00820 | 80 | 78 | 72 | 77 | 77 | 78 | 78 | 80 | 79 | 79 | 85 | 87 |
| Equated Ton Mile | .00424 | 82 | 80 | 74 | 79 | 79 | 82 | 81 | 85 | 84 | 74 | 88 | 90 |

* In thousands.
∮ Includes Loss and Damage Freight for which Indices not shown.



### Analysis 3.7 Chronological Indices of Rail Tonnage of Commodity Groups

| RATING GROUP / COMMODITY GROUP | BASE YEAR 1932 AGGREGATE (000) | BASE YEAR 12 YEAR AVERAGE | PERCENTAGE RELATIONSHIP TO 1932 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 | 1934∮ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | 630,989 | 172 | 156 | 198 | 184 | 192 | 207 | 198 | 198 | 206 | 177 | 138 | 108 | 123 |
| I ROUGH MATERIAL | 63,064 | 267 | 249 | 329 | 330 | 343 | 364 | 369 | 304 | 292 | 256 | 179 | 90 | 117 |
| 10 Sand, Stone, Gravel | 46,641 | 241 | 221 | 287 | 293 | 312 | 337 | 347 | 273 | 299 | 239 | 179 | 78 | 100 |
| 11 Timber | 10,920 | 367 | 371 | 508 | 486 | 476 | 480 | 464 | 434 | 433 | 331 | 178 | 141 | 183 |
| 12 Rough Vegetables | 5,503 | 105∮ | - | - | - | - | - | - | - | 96 | 97 | 113 | 101 | 121 |
| 19 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| II RAW MATERIAL | 400,169 | 161 | 147 | 187 | 168 | 174 | 191 | 178 | 182 | 193 | 166 | 132 | 111 | 124 |
| 20 Grain | 36,650 | 141 | 163 | 148 | 164 | 141 | 146 | 149 | 161 | 153 | 143 | 127 | 101 | 97 |
| 21 Animal Feeds | 8,125 | 151 | 145 | 159 | 167 | 169 | 174 | 179 | 161 | 167 | 165 | 133 | 99 | 105 |
| 22 Fresh Vegetables | 7,874 | 120 | 108 | 118 | 120 | 128 | 135 | 133 | 127 | 130 | 126 | 121 | 89 | 96 |
| 23 Live Animals | 10,212 | 146 | 167 | 177 | 174 | 163 | 160 | 155 | 156 | 146 | 134 | 121 | 93 | 116 |
| 24 Dry Fuels | 282,599 | 143 | 126 | 169 | 149 | 152 | 174 | 161 | 154 | 164 | 145 | 121 | 105 | 118 |
| 25 Crude Liquids | 10,860 | 159 | 113 | 147 | 156 | 191 | 192 | 195 | 180 | 185 | 168 | 157 | 125 | 131 |
| 26 Ores | 23,011 | 360 | 290 | 405 | 310 | 393 | 415 | 365 | 510 | 603 | 453 | 267 | 210 | 254 |
| 27 Lumber | 12,817 | 293 | 344 | 423 | 385 | 388 | 365 | 339 | 342 | 327 | 223 | 157 | 117 | 115 |
| 28 Fertilizer | 8,021 | 175∮ | - | - | - | - | - | - | 222 | 232 | 227 | 157 | 113 | 137 |
| 29 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| III SEMIPROCESSED MATERIAL | 23,629 | 224 | 250 | 299 | 273 | 302 | 299 | 253 | 237 | 238 | 183 | 134 | 121 | 140 |
| 30 Primary Metals | 3,489 | 396 | 407 | 583 | 492 | 577 | 597 | 426 | 443 | 466 | 305 | 186 | 171 | 193 |
| 31 Fibres | 6,242 | 175 | 199 | 211 | 216 | 226 | 223 | 213 | 169 | 169 | 150 | 112 | 112 | 125 |
| 32 Hides | 631 | 140 | 161 | 164 | 153 | 155 | 152 | 158 | 136 | 138 | 130 | 123 | 110 | 114 |
| 33 Rubber | 378 | 119∮ | - | - | - | - | - | - | 120 | 148 | 120 | 122 | 104 | 126 |
| 34 Salt | 2,576 | 121 | 126 | 132 | 128 | 132 | 126 | 126 | 130 | 124 | 115 | 110 | 106 | 107 |
| 35 Ice | 1,464 | 241 | 352 | 346 | 303 | 338 | 284 | 278 | 268 | 226 | 176 | 154 | 72 | 71 |
| 36 Primary Paper | 2,213 | 121∮ | - | - | - | - | - | - | 119 | 131 | 130 | 107 | 104 | 131 |
| 37 Horticultural | 367 | 115∮ | - | - | - | - | - | - | 346 | 392 | 352 | 181 | 141 | 175 |
| 38 Scrap | 6,269 | 258∮ | - | - | - | - | - | - | 346 | 392 | 352 | 181 | 141 | 175 |
| 39 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IV NECESSARIES | 33,854 | 118 | 112 | 116 | 119 | 121 | 122 | 124 | 128 | 129 | 125 | 115 | 104 | 114 |
| 40 Dry Vegetables | 6,019 | 119 | 115 | 115 | 120 | 123 | 118 | 126 | 137 | 131 | 130 | 119 | 100 | 112 |
| 41 Edible Liquids | 2,680 | 136 | 116 | 118 | 129 | 149 | 154 | 165 | 146 | 149 | 147 | 126 | 139 | 181 |
| 43 Edible Animal Products | 6,000 | 115 | 106 | 122 | 122 | 117 | 120 | 119 | 118 | 121 | 115 | 112 | 104 | 110 |
| 43 Manufactured Foods | 6,893 | 126 | 112 | 118 | 128 | 138 | 137 | 139 | 135 | 143 | 138 | 120 | 106 | 119 |
| 44 Processed Cereals | 10,024 | 105 | 107 | 105 | 103 | 99 | 101 | 100 | 116 | 114 | 113 | 108 | 97 | 96 |
| 45 Furnishings | 1,513 | 114∮ | - | - | - | - | - | - | 169 | 183 | 151 | 138 | 126 | 126 |
| 46 Textiles and Leather | 725 | 160 | 178 | 190 | 176 | 188 | 184 | 167 | 177 | 179 | 145 | 128 | 113 | 105 |
| 47 Clothing* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 49 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| V AUXILIARIES | 92,684 | 142 | 112 | 131 | 139 | 153 | 158 | 161 | 178 | 180 | 165 | 135 | 94 | 112 |
| 50 Masonry | 20,488 | 218 | 202 | 234 | 241 | 261 | 265 | 265 | 287 | 272 | 226 | 166 | 93 | 107 |
| 51 Power | 35,888 | 101 | 62 | 74 | 84 | 94 | 99 | 105 | 119 | 130 | 132 | 119 | 94 | 100 |
| 52 Lubricants | 2,577 | 115 | 75 | 90 | 101 | 113 | 120 | 126 | 114 | 154 | 142 | 122 | 96 | 109 |
| 53 Kindlers* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 54 Preservatives | 3,353 | 121∮ | - | - | - | - | - | - | 137 | 149 | 129 | 116 | 98 | 109 |
| 55 Chemicals, in tanks | 1,444 | 151∮ | - | - | - | - | - | - | 183 | 200 | 166 | 135 | 119 | 139 |
| 56 Chemicals, packaged | 104 | 153 | 168 | 174 | 160 | 168 | 183 | 197 | 142 | 153 | 150 | 150 | 93 | 107 |
| 57 Cleansers and Adhesives | 983 | 119∮ | - | - | - | - | - | - | 128 | 136 | 130 | 121 | 103 | 110 |
| 58 Explosives | 136 | 174∮ | - | - | - | - | - | - | 244 | 236 | 204 | 154 | 106 | 143 |
| 59 Miscellaneous# | 27,711 | 158∮ | - | - | - | - | - | - | 205 | 216 | 177 | 137 | 112 | 130 |
| VI ACCESSORIES | 17,589 | 267 | 220 | 308 | 257 | 295 | 311 | 310 | 369 | 415 | 300 | 189 | 135 | 181 |
| 60 Ferrous Metals | 12,263 | 250 | 200 | 272 | 222 | 259 | 273 | 281 | 363 | 405 | 296 | 188 | 139 | 185 |
| 61 Nonferrous Metals | 106 | 149 | 579 | 711 | 654 | 723 | 748 | 387 | 336 | 417 | 319 | 265 | 146 | 259 |
| 62 Rubber | 222 | 210∮ | - | - | - | - | - | - | 332 | 334 | 225 | 142 | 127 | 185 |
| 63 Tools and Appliances | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 64 Machinery and Parts | 1,254 | 403 | 430 | 615 | 511 | 551 | 586 | 582 | 407 | 427 | 331 | 193 | 107 | 145 |
| 65 Vehicles and Parts | 2,365 | 279 | 199 | 315 | 285 | 326 | 343 | 309 | 380 | 464 | 303 | 190 | 134 | 224 |
| 66 Stationery, Printing | 1,227 | 133∮ | - | - | - | - | - | - | 151 | 164 | 150 | 128 | 106 | 102 |
| 67 Personal | 152 | 112∮ | - | - | - | - | - | - | 132 | 109 | 112 | 104 | 114 | 118 |
| 68 Amusement* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 69 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

* Included in No. 59.
# Includes all Miscellaneous Manufactures, I.C.C. Commodity Group 701.
∮ Not included in 12-year average or 6-year average - fourth quarter 1934 estimated.
/ Six-year average.
Source - I.C.C. Commodity Statistics. New Classification adopted in 1928 distorts indices of some commodities for years prior to 1928.

Analysis 3.8 Chronological Indices of Rail Net Ton Miles of Commodity Groups - Carload Traffic Only

| RATING GROUP / COMMODITY GROUP | BASE YEAR 1932 AGGREGATE (000) | 12 YEAR AVERAGE | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 | 1934# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PERCENTAGE RELATIONSHIP TO 1932 | | | | | | | | | | | |
| ALL GROUPS | 219,733,001 | 160 | 147 | 183 | 170 | 177 | 189 | 179 | 182 | 189 | 163 | 132 | 107 | 120 |
| I ROUGH MATERIAL | 5,784,067 | 285 | 271 | 361 | 358 | 367 | 385 | 386 | 327 | 317 | 270 | 179 | 99 | 128 |
| 10 Sand, Stone, Gravel | 3,673,879 | 244 | 221 | 287 | 293 | 312 | 337 | 347 | 273 | 259 | 239 | 179 | 78 | 100 |
| 11 Timber | 1,853,564 | 367 | 371 | 508 | 486 | 476 | 480 | 464 | 434 | 433 | 331 | 178 | 141 | 184 |
| 12 Rough Vegetables | 256,624 | 105/ | - | - | - | - | - | - | 96 | 97 | 113 | 101 | 121 | 123 |
| 19 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| II RAW MATERIAL | 140,477,447 | 157 | 147 | 185 | 168 | 172 | 187 | 173 | 176 | 184 | 158 | 129 | 107 | 118 |
| 20 Grain | 11,080,502 | 141 | 163 | 148 | 164 | 141 | 146 | 149 | 161 | 153 | 143 | 127 | 101 | 97 |
| 21 Animal Feeds | 3,396,403 | 151 | 145 | 159 | 167 | 169 | 174 | 179 | 161 | 167 | 165 | 133 | 99 | 105 |
| 22 Fresh Vegetables | 13,519,184 | 120 | 108 | 118 | 120 | 128 | 135 | 133 | 127 | 130 | 126 | 121 | 89 | 96 |
| 23 Live Animals | 4,575,044 | 145 | 167 | 177 | 174 | 163 | 160 | 155 | 156 | 146 | 134 | 121 | 93 | 116 |
| 24 Dry Fuels | 89,773,322 | 143 | 126 | 169 | 149 | 152 | 174 | 161 | 154 | 164 | 145 | 121 | 105 | 118 |
| 25 Crude Liquids | 3,407,447 | 159 | 113 | 147 | 156 | 191 | 192 | 195 | 180 | 185 | 168 | 157 | 125 | 131 |
| 26 Ores | 4,392,961 | 360 | 290 | 405 | 310 | 393 | 415 | 365 | 510 | 603 | 453 | 267 | 210 | 254 |
| 27 Lumber | 8,523,532 | 290 | 344 | 423 | 385 | 388 | 365 | 304 | 342 | 327 | 223 | 157 | 117 | 115 |
| 28 Fertilizer | 1,809,053 | 175/ | - | - | - | - | - | - | 222 | 232 | 227 | 157 | 113 | 137 |
| 29 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| III SEMIPROCESSED MATERIAL | 7,934,178 | 210 | 229 | 274 | 255 | 279 | 280 | 238 | 219 | 223 | 175 | 129 | 123 | 135 |
| 30 Primary Metals | 1,178,420 | 396 | 407 | 583 | 492 | 577 | 597 | 426 | 443 | 466 | 305 | 186 | 171 | 193 |
| 31 Fibres | 2,627,832 | 175 | 199 | 211 | 216 | 226 | 223 | 213 | 169 | 169 | 150 | 112 | 112 | 125 |
| 32 Hides | 374,114 | 140 | 161 | 164 | 153 | 155 | 152 | 158 | 136 | 138 | 130 | 123 | 110 | 114 |
| 33 Rubber | 208,444 | 119/ | - | - | - | - | - | - | 120 | 148 | 120 | 122 | 104 | 126 |
| 34 Salt | 1,145,663 | 121 | 126 | 132 | 128 | 132 | 126 | 126 | 130 | 121 | 115 | 110 | 106 | 107 |
| 35 Ice | 73,761 | 241 | 352 | 346 | 303 | 337 | 284 | 278 | 268 | 226 | 176 | 154 | 72 | 71 |
| 36 Primary Paper | 1,210,322 | 121/ | - | - | - | - | - | - | 134 | 136 | 134 | 119 | 108 | 100 |
| 37 Horticultural | 156,805 | 115/ | - | - | - | - | - | - | 119 | 131 | 130 | 107 | 104 | 131 |
| 38 Scrap | 958,818 | 252/ | - | - | - | - | - | - | 346 | 392 | 352 | 181 | 141 | 175 |
| 39 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IV NECESSARIES | 23,087,553 | 121 | 111 | 116 | 119 | 121 | 121 | 124 | 128 | 129 | 125 | 115 | 140 | 114 |
| 40 Dry Vegetables | 4,603,101 | 119 | 115 | 115 | 120 | 123 | 118 | 126 | 137 | 131 | 130 | 119 | 100 | 112 |
| 41 Edible Liquids | 1,592,405 | 136 | 116 | 118 | 129 | 149 | 154 | 165 | 146 | 149 | 147 | 126 | 139 | 181 |
| 42 Edible Animal Products | 5,613,820 | 115 | 106 | 122 | 122 | 117 | 120 | 119 | 118 | 121 | 115 | 112 | 104 | 110 |
| 43 Manufactured Foods | 4,193,197 | 126 | 112 | 118 | 128 | 138 | 137 | 139 | 135 | 143 | 138 | 120 | 106 | 119 |
| 44 Processed Cereals | 5,720,481 | 105 | 107 | 105 | 103 | 99 | 101 | 100 | 116 | 111 | 113 | 108 | 97 | 96 |
| 45 Furnishings | 928,235 | 144/ | - | - | - | - | - | - | 169 | 183 | 150 | 138 | 125 | 126 |
| 46 Textiles and Leather | 436,314 | 160 | 178 | 190 | 176 | 188 | 184 | 167 | 177 | 179 | 145 | 128 | 113 | 105 |
| 47 Clothing* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 49 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| V AUXILIARIES | 34,735,229 | 136 | 104 | 122 | 130 | 143 | 148 | 152 | 169 | 172 | 160 | 133 | 94 | 109 |
| 50 Masonry | 5,640,843 | 218 | 202 | 234 | 241 | 261 | 265 | 265 | 287 | 272 | 226 | 166 | 93 | 107 |
| 51 Power | 12,591,847 | 101 | 62 | 74 | 84 | 94 | 99 | 105 | 119 | 130 | 132 | 119 | 94 | 100 |
| 52 Lubricants | 1,255,364 | 115 | 75 | 90 | 101 | 113 | 120 | 126 | 144 | 154 | 141 | 122 | 96 | 109 |
| 53 Kindlers* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 54 Preservatives | 1,197,390 | 122/ | - | - | - | - | - | - | 137 | 149 | 129 | 116 | 98 | 109 |
| 55 Chemicals, in tanks | 317,780 | 151/ | - | - | - | - | - | - | 183 | 200 | 166 | 135 | 119 | 139 |
| 56 Chemicals, packaged | 47,722 | 153 | 168 | 174 | 160 | 168 | 181 | 197 | 142 | 153 | 150 | 150 | 93 | 107 |
| 57 Cleansers and Adhesives | 482,635 | 120/ | - | - | - | - | - | - | 128 | 136 | 130 | 121 | 103 | 110 |
| 58 Explosives | 65,414 | 174/ | - | - | - | - | - | - | 244 | 236 | 204 | 154 | 106 | 143 |
| 59 Miscellaneous# | 13,136,232 | 158/ | - | - | - | - | - | - | 205 | 216 | 177 | 137 | 112 | 130 |
| VI ACCESSORIES | 7,714,527 | 275 | 227 | 322 | 271 | 310 | 327 | 322 | 372 | 422 | 302 | 189 | 134 | 190 |
| 60 Ferrous Metals | 4,268,433 | 250 | 200 | 272 | 222 | 259 | 273 | 281 | 343 | 405 | 296 | 188 | 139 | 185 |
| 61 Nonferrous Metals | 28,764 | 449 | 579 | 711 | 654 | 723 | 747 | 387 | 336 | 417 | 319 | 265 | 148 | 259 |
| 62 Rubber | 202,152 | 210/ | - | - | - | - | - | - | 332 | 334 | 225 | 142 | 127 | 185 |
| 63 Tools and Appliances | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 64 Machinery and Parts | 736,615 | 403 | 430 | 615 | 511 | 551 | 586 | 582 | 407 | 427 | 331 | 193 | 107 | 145 |
| 65 Vehicles and Parts | 1,650,573 | 279 | 199 | 314 | 285 | 326 | 343 | 309 | 380 | 463 | 303 | 190 | 134 | 224 |
| 66 Stationery, Printing | 636,797 | 133/ | - | - | - | - | - | - | 151 | 164 | 150 | 128 | 106 | 102 |
| 67 Personal | 191,193 | 112/ | - | - | - | - | - | - | 132 | 109 | 112 | 104 | 114 | 118 |
| 68 Amusement* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 69 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

* Included in No. 59.
\# Includes all Miscellaneous Manufactures, I.C.C. Commodity Groups 701.
/ Not included in 12-year average or 6-year average - fourth quarter 1934 estimated.
/ Six-year average.
Source - I.C.C. Commodity Statistics. New classification adopted in 1928 distorts indices of some commodities for years prior to 1928.





Analysis 3.9 Chronological Indices of Pipe Traffic Operations and Income

| | BASE YEAR 1932 AGGREGATE | 12 YEAR AVERAGE | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PERCENTAGE RELATIONSHIP TO 1932 | | | | | | | | | | |
| **AGGREGATE STATISTICS** | | | | | | | | | | | | | |
| Companies Reporting* | 46 | 39 | 36 | 35 | 36 | 37 | 34 | 33 | 33 | 37 | 40 | 51 | 49 |
| Miles Operated | 92,782 | 85 | 62 | 70 | 73 | 75 | 79 | 82 | 88 | 92 | 96 | 100 | 100 |
| Gross Investment | $763,941,669 | 82 | 50 | 57 | 65 | 67 | 71 | 80 | 86 | 97 | 101 | 110 | 100 |
| Net Investment# | $426,074,456 | 91 | 47 | 60 | 68 | 74 | 75 | 86 | 90 | 103 | 104 | 115 | 92 |
| Tons Originated | 82,827,629 | 85 | 58 | 59 | 68 | 74 | 75 | 88 | 94 | 103 | 105 | 101 | 101 |
| **REVENUES** | | | | | | | | | | | | | |
| Gathering Lines | $ 57,378,601 | 99 | 73 | 78 | 85 | 92 | 95 | 110 | 116 | 126 | 122 | 106 | 87 |
| Trunk Lines | $154,410,046 | 87 | 56 | 56 | 64 | 73 | 77 | 85 | 101 | 116 | 110 | 105 | 97 |
| **COST** | | | | | | | | | | | | | |
| Gathering Lines - Total | $ 27,992,151 | 116 | 104 | 105 | 110 | 122 | 121 | 130 | 133 | 131 | 126 | 115 | 100 |
| Maintenance - Total | $ 11,580,056 | 126 | 108 | 112 | 124 | 135 | 135 | 140 | 150 | 139 | 136 | 137 | 95 |
| Repairs | 2,889,490 | 139 | 135 | 133 | 142 | 149 | 148 | 164 | 162 | 161 | 151 | 125 | 101 |
| Depreciation | 7,090,655 | 105 | 84 | 89 | 98 | 111 | 111 | 117 | 121 | 112 | 114 | 123 | 84 |
| Retirements | 1,599,911 | 192 | 163 | 169 | 205 | 213 | 220 | 195 | 259 | 218 | 206 | 219 | 133 |
| Transportation | $ 9,198,215 | 118 | 104 | 106 | 109 | 116 | 122 | 144 | 139 | 146 | 129 | 115 | 90 |
| Administration | $ 2,808,528 | 93 | 94 | 85 | 103 | 89 | 92 | 87 | 94 | 94 | 90 | 94 | 95 |
| Taxes | $ 4,405,352 | 102 | 102 | 96 | 81 | 122 | 100 | 101 | 102 | 99 | 116 | 68 | 141 |
| Trunk Lines - Total | $ 73,972,791 | 89 | 63 | 70 | 72 | 68 | 83 | 90 | 99 | 107 | 109 | 99 | 108 |
| Maintenance - Total | $ 36,775,063 | 91 | 61 | 69 | 77 | 66 | 88 | 96 | 103 | 110 | 111 | 108 | 101 |
| Repairs | 5,448,616 | 121 | 108 | 116 | 109 | 97 | 123 | 142 | 151 | 155 | 140 | 118 | 93 |
| Depreciation | 30,396,224 | 79 | 48 | 55 | 67 | 57 | 75 | 75 | 89 | 87 | 102 | 102 | 97 |
| Retirements | 930,223 | 269 | 161 | 249 | 202 | 186 | 286 | 494 | 241 | 576 | 216 | 245 | 272 |
| Transportation | $ 18,702,654 | 98 | 74 | 78 | 81 | 78 | 90 | 97 | 116 | 130 | 122 | 113 | 101 |
| Administration | $ 6,848,658 | 71 | 51 | 58 | 56 | 53 | 64 | 69 | 73 | 79 | 76 | 81 | 95 |
| Taxes | $ 11,646,416 | 79 | 62 | 64 | 53 | 68 | 69 | 70 | 76 | 82 | 100 | 59 | 152 |
| **NET OPERATION INCOME** | $109,823,705 | 75 | 47 | 46 | 57 | 73 | 71 | 83 | 101 | 123 | 113 | 107 | 83 |
| Gathering Lines | 29,386,450 | 74 | 42 | 52 | 61 | 62 | 70 | 92 | 100 | 123 | 118 | 97 | 74 |
| Trunk Lines | 80,437,255 | 76 | 49 | 44 | 56 | 76 | 71 | 80 | 102 | 124 | 112 | 111 | 86 |
| **RETURN ON GROSS INVESTMENT (PERCENTAGES)** | 14 | 15 | 14 | 12 | 13 | 16 | 14 | 15 | 17 | 18 | 16 | 14 | 12 |

* Actual - not ratio.
\# Less depreciation.

## SECTION 3. TYPICALITY OF 1932 STATISTICS

### Analysis 3.10 Chronological Indices of Crude Petroleum Production (Tons)

| REGIONS AND STATES | BASE YEAR 1932 AGGREGATE | 12 YEAR AVERAGE | PERCENTAGE RELATIONSHIP TO 1932 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1933 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES - TOTAL | 122,013,827 | 104 | 71 | 93 | 91 | 97 | 98 | 115 | 115 | 128 | 114 | 108 | 114 |
| North Atlantic - Total | 2,473,971 | 78 | 53 | 56 | 56 | 62 | 69 | 74 | 79 | 95 | 103 | 96 | 99 |
| New York | 545,144 | 69 | 29 | 36 | 41 | 48 | 56 | 64 | 74 | 96 | 104 | 96 | 90 |
| Pennsylvania | 1,928,827 | 81 | 60 | 61 | 60 | 65 | 72 | 77 | 80 | 95 | 103 | 96 | 102 |
| Great Lakes - Total | 2,646,931 | 97 | 101 | 99 | 93 | 93 | 94 | 93 | 89 | 109 | 101 | 88 | 100 |
| Ohio | 721,678 | 139 | 146 | 153 | 147 | 155 | 157 | 164 | 151 | 145 | 140 | 115 | 92 |
| Michigan | 1,073,815 | 34 | - | - | - | - | 1 | 6 | 9 | 66 | 57 | 55 | 114 |
| Indiana | 125,253 | 113 | 135 | 129 | 116 | 103 | 100 | 106 | 131 | 122 | 123 | 104 | 90 |
| Illinois | 726,185 | 145 | 201 | 186 | 172 | 168 | 166 | 150 | 138 | 135 | 123 | 108 | 90 |
| Southeast - Total | 1,580,109 | 123 | 157 | 142 | 131 | 123 | 121 | 126 | 128 | 131 | 123 | 108 | 83 |
| West Virginia | 602,331 | 141 | 181 | 164 | 153 | 149 | 153 | 155 | 146 | 144 | 131 | 115 | 98 |
| Kentucky | 977,001 | 111 | 143 | 128 | 118 | 108 | 100 | 107 | 117 | 124 | 118 | 103 | 73 |
| Tennessee | 777 | 420 | 200 | 160 | 200 | 480 | 860 | 1200 | 920 | 380 | 420 | 120 | - |
| Northwest - Total | 8,058,896 | 128 | 118 | 146 | 138 | 140 | 150 | 135 | 129 | 132 | 124 | 108 | 108 |
| Kansas | 5,415,384 | 107 | 91 | 81 | 83 | 110 | 119 | 118 | 111 | 123 | 119 | 106 | 120 |
| Colorado | 176,535 | 131 | 9 | 8 | 39 | 108 | 214 | 249 | 214 | 208 | 146 | 136 | 83 |
| Montana | 381,818 | 148 | 100 | 113 | 115 | 167 | 314 | 206 | 163 | 162 | 136 | 115 | 86 |
| Wyoming | 2,085,159 | 177 | 199 | 334 | 294 | 217 | 192 | 159 | 160 | 144 | 133 | 111 | 85 |
| Southwest - Total | 79,570,316 | 96 | 62 | 69 | 73 | 82 | 84 | 109 | 110 | 117 | 109 | 110 | 123 |
| Arkansas | 1,872,727 | 267 | 105 | 304 | 382 | 642 | 484 | 332 | 266 | 207 | 163 | 123 | 96 |
| Oklahoma | 23,814,141 | 128 | 98 | 105 | 113 | 115 | 117 | 181 | 163 | 166 | 141 | 118 | 118 |
| Texas | 48,559,128 | 75 | 38 | 42 | 43 | 46 | 53 | 70 | 82 | 95 | 93 | 106 | 127 |
| Louisiana | 3,388,811 | 108 | 162 | 114 | 97 | 93 | 106 | 105 | 100 | 94 | 107 | 100 | 113 |
| New Mexico | 1,935,509 | 39 | - | - | 8 | 9 | 13 | 10 | 8 | 15 | 82 | 122 | 113 |
| Pacific Coast - Total | 27,681,118 | 122 | 78 | 148 | 129 | 131 | 126 | 130 | 94 | 164 | 128 | 106 | 97 |
| California | 27,681,118 | 122 | 78 | 148 | 129 | 131 | 126 | 130 | 94 | 164 | 128 | 106 | 97 |
| Unassigned | 2,486 | 59 | 81 | 113 | 81 | 75 | 50 | 44 | 37 | 44 | 44 | 44 | - |



## SECTION 4. INCOME

### Analysis 4.1 Reporting Carriers Freight Service Income - 1932

| | RAIL (000) | WATER CARGO CARLOT COMMON (000) | WATER CARGO CONTRACT (000) | WATER CARGO PRIVATE (000) | PIPE (000) |
|---|---|---|---|---|---|
| NUMBER OF REPORTING CARRIERS* | 160 | 103 | 36 | 29 | 45 |
| REVENUES | | | | | |
| Freight - Total | $ 2,442,881 | $ 102,407 | $ 12,466 | $ 4,708 | $211,789 |
| Rough Material | 62,354 | - | - | - | - |
| Raw Material | 1,202,727 | - | - | - | 199,756 |
| Semiprocessed Material | 110,376 | - | - | - | - |
| Necessaries | 291,454 | - | - | - | - |
| Auxiliaries | 481,104 | - | - | - | 12,033 |
| Accessories | 129,282 | - | - | - | - |
| L.C.L. | 252,427 | - | - | - | - |
| Adjustment | 86,813 | - | - | - | - |
| Switching | 66,501 | - | - | - | - |
| Other | 49,999 | - | - | - | - |
| Total Revenues | $ 2,559,380 | $ 102,407 | $ 12,466 | $ 4,708 | $211,789 |
| EXPENSES | | | | | |
| Maintenance | $ 785,184 | $ 18,524 | $ 2,108 | $ 1,544 | $ 48,355 |
| Roadway | 228,146 | 1,878 | 80 | 34 | 29,336 |
| Power - Total | 204,532 | - | - | - | 15,004 |
| Structures | 12,175 | - | - | - | 15,004 |
| Locomotives | 192,357 | - | - | - | - |
| Cars - Total | 338,750 | 14,507 | 2,018 | 1,495 | - |
| Owned | 252,048 | - | - | - | - |
| Hired | 86,702 | - | - | - | - |
| Station | 9,334 | 2,139 | 9 | 15 | 4,015 |
| Wharves & Docks | 4,422 | - | - | - | - |
| Transportation | $ 809,406 | $ 63,852 | $ 9,458 | $ 5,699 | $ 27,901 |
| Train - Total | 342,712 | 45,930 | 8,101 | 5,338 | 17,249 |
| Movement | 339,881 | 40,107 | 7,283 | 4,831 | - |
| Supplies | 2,831 | 5,823 | 818 | 507 | - |
| Assemblage - Total | 299,497 | 3,914 | 79 | 54 | 9,077 |
| Movement | 270,513 | 3,914 | 79 | 54 | - |
| Supplies | 28,984 | - | - | - | - |
| Floatage | 12,026 | 1,224 | 290 | 0 | - |
| Station Agency | 155,171 | 12,783 | 989 | 306 | 1,575 |
| Other Operations | $ 5,889 | - | - | - | - |
| Water Operations | 3,051 | - | - | - | - |
| Miscellaneous | 2,838 | - | - | - | - |
| Overhead | $ 389,849 | $ 27,164 | $ 2,347 | $ 773 | $ 25,709 |
| Administration - Total | 178,085 | 26,220 | 2,235 | 706 | 9,657 |
| Traffic | 63,238 | 11,619 | 383 | 119 | - |
| General | 114,847 | 14,601 | 1,852 | 587 | - |
| Loss and Damage Freight | 18,459 | - | - | - | - |
| Taxes | 193,305 | 944 | 111 | 67 | 16,052 |
| TOTAL EXPENSES | $ 1,990,328 | $ 109,540 | $ 13,914 | $ 8,015 | $101,965 |
| NET RESULTS | $ P 569,052 | $ D 7,133 | $ D 1,448 | $ D 3,307 | P $109,824 |

* Actual figures (not thousands)
P Profit. D. Deficit

Sources: Railway Revenues, Overhead Expenses and Other Operations Expenses from I.C.C. Reports of Class I Railways and Switching Companies; Maintenance and Transportation Expenses from returns to Coordinator's Rail Carrier Inquiry.
Waterway Revenues and Expenses from returns to Coordinator's inquiry.
Pipe line Revenues and Expenses from I.C.C. Reports.

SECTION 4. INCOME

Analysis 4.2 Rail Carrier Freight Service Income - 1932

| | UNITED STATES (000) | EASTERN DISTRICT (000) | SOUTHERN DISTRICT (000) | WESTERN DISTRICT (000) |
|---|---|---|---|---|
| **REVENUE** | $2,559,380 | $1,122,400 | $ 487,363 | $ 949,617 |
| Freight - Total | 2,442,881 | 1,053,331 | 473,963 | 915,587 |
| I Rough | 62,354 | 18,641 | 13,364 | 30,349 |
| II Raw | 1,202,727 | 500,252 | 279,921 | 422,554 |
| III Semiprocessed | 110,376 | 46,801 | 19,897 | 43,678 |
| IV Necessaries | 291,454 | 127,519 | 42,032 | 121,904 |
| V Auxiliaries | 481,104 | 215,315 | 68,832 | 196,957 |
| VI Accessories | 129,282 | 75,852 | 13,740 | 39,690 |
| L C L | 252,427 | 108,342 | 53,379 | 90,706 |
| Adjustment (Debit) | 86,813 | 39,391 | 17,208 | 30,249 |
| Switching | 66,501 | 44,131 | 6,082 | 16,287 |
| Other | 49,998 | 24,938 | 7,318 | 17,742 |
| **EXPENSES** * | | | | |
| Station - Total | $ 164,505 | $ 83,387 | $ 24,861 | $ 56,257 |
| Maintenance | 9,334 | 4,410 | 1,521 | 3,403 |
| Transportation | 155,171 | 78,977 | 23,340 | 52,854 |
| Yard - Total | 724,929 | 397,766 | 101,321 | 225,842 |
| Maintenance of Way and Struct. - Total | 48,986 | 24,854 | 7,569 | 16,583 |
| Roadway | 40,335 | 20,387 | 6,102 | 13,846 |
| Power Structure | 4,229 | 2,278 | 670 | 1,261 |
| Wharves and docks | 4,422 | 2,170 | 777 | 1,475 |
| Maintenance of Equipment - Total | 364,420 | 191,278 | 50,296 | 122,846 |
| Power | 54,201 | 33,719 | 7,218 | 13,265 |
| Vehicle | 310,219 | 157,559 | 43,078 | 109,581 |
| Home | 232,323 | 113,770 | 39,740 | 78,813 |
| Foreign | 77,896 | 43,790 | 3,338 | 30,768 |
| Transportation - Total | 311,523 | 181,653 | 43,456 | 86,413 |
| Supplies | 28,984 | 15,967 | 3,763 | 9,254 |
| Switching | 270,513 | 154,819 | 39,076 | 76,617 |
| Floatage | 12,026 | 10,867 | 617 | 542 |
| Road - Total | 705,156 | 311,600 | 121,404 | 272,151 |
| Maintenance of Way and Struct. - Total | 195,757 | 80,867 | 37,556 | 77,334 |
| Roadway | 187,811 | 77,476 | 36,202 | 74,133 |
| Power Structures | 7,946 | 3,391 | 1,353 | 3,202 |
| Maintenance of Equipment - Total | 166,687 | 76,223 | 28,828 | 61,636 |
| Power | 138,156 | 63,345 | 24,854 | 49,957 |
| Vehicle | 28,531 | 12,877 | 3,974 | 11,679 |
| Home | 19,725 | 9,008 | 3,229 | 7,488 |
| Foreign | 8,806 | 3,869 | 746 | 4,191 |
| Transportation - Total | 342,712 | 154,511 | 55,021 | 133,181 |
| Supplies | 2,831 | 1,265 | 465 | 1,100 |
| Movement | 339,881 | 153,246 | 54,555 | 132,080 |
| Office - Total | 178,085 | 87,997 | 28,758 | 61,330 |
| Traffic | 63,238 | 31,248 | 10,212 | 21,778 |
| Directive | 114,847 | 56,749 | 18,546 | 39,551 |
| Taxes | 193,305 | 95,518 | 31,216 | 66,571 |
| Total | $1,965,979 | $ 976,268 | $ 307,560 | $ 682,151 |
| **NET RESULTS** | $ 593,401 | $ 146,131 | $ 179,803 | $ 267,466 |
| **OPERATING RATIO** | 77% | 87% | 63% | 72% |

* Does not include Water Operations, Miscellaneous Operations and Loss and Damage Freight.



SECTION 4. INCOME

Analysis 4.3 Rail Carrier Freight Service Income Eastern and Southern Districts - 1932 *

| | NEW ENGLAND (000) | TRUNK LINE (000) | CENTRAL (000) | POCA-HONTAS (000) | SOUTH-EASTERN (000) |
|---|---|---|---|---|---|
| **STATISTICS** | | | | | |
| Route Miles | 8 | 22 | 38 | 8 | 35 |
| Loaded Cars Handled - Road | 5,691 | 27,943 | 24,951 | 6,625 | 11,717 |
| Loaded Cars Handled - Yard | 6,907 | 38,946 | 43,691 | 10,344 | 18,146 |
| Terminal Cars | 2,907 | 12,505 | 12,996 | 3,434 | 6,504 |
| Equated Cars | 1,832 | 6,103 | 6,846 | 1,680 | 2,947 |
| Loaded Car Miles | 346 | 1,881 | 2,459 | 558 | 1,151 |
| Train Miles | 12,376 | 59,028 | 86,166 | 17,023 | 53,721 |
| Net Ton Miles (Revenue) | 6,034 | 48,246 | 59,148 | 21,300 | 26,018 |
| Gross Ton Miles | 21,359 | 139,836 | 181,828 | 49,990 | 81,750 |
| Vehicle Ton Miles | 18,250 | 122,280 | 159,382 | 44,555 | 70,383 |
| Yard Locomotive Hours | 1,137 | 8,865 | 10,072 | 1,412 | 3,762 |
| **EXPENSES** | | | | | |
| Station - Total | $ 8,867 | $ 37,507 | $ 37,012 | $ 5,893 | $ 18,968 |
| Maintenance | 511 | 2,083 | 1,816 | 328 | 1,192 |
| Transportation | 8,357 | 35,424 | 35,197 | 5,565 | 17,775 |
| Yard - Total | 27,050 | 177,312 | 193,404 | 31,123 | 70,198 |
| Maintenance of Way and Struct. - Total | 2,404 | 9,661 | 12,768 | 2,343 | 5,226 |
| Roadway | 2,139 | 7,326 | 10,921 | 1,572 | 4,529 |
| Power Structure | 148 | 888 | 1,241 | 279 | 411 |
| Wharves and Docks | 117 | 1,447 | 606 | 491 | 286 |
| Maintenance of Equipment - Total | 12,740 | 82,043 | 96,495 | 15,098 | 35,197 |
| Power | 2,016 | 16,861 | 14,841 | 2,485 | 4,733 |
| Vehicle | 10,723 | 65,182 | 81,654 | 12,614 | 30,465 |
| Home | 6,635 | 48,535 | 58,599 | 13,020 | 26,721 |
| Foreign | 4,088 | 16,647 | 23,055 Cr. | 406 | 3,744 |
| Transportation - Total | 11,905 | 85,608 | 84,140 | 13,682 | 29,771 |
| Supplies | 905 | 6,859 | 8,203 | 1,436 | 2,327 |
| Switching | 10,990 | 69,244 | 74,585 | 11,755 | 27,322 |
| Floatage | 9 | 9,505 | 1,353 | 491 | 126 |
| Road - Total | 28,727 | 134,833 | 148,041 | 37,891 | 83,513 |
| Maintenance of Way and Struct. - Total | 8,687 | 31,511 | 40,868 | 11,498 | 26,058 |
| Roadway | 8,376 | 29,916 | 39,184 | 10,888 | 25,315 |
| Power Structures | 312 | 1,395 | 1,684 | 610 | 743 |
| Maintenance of Equipment - Total | 5,803 | 34,347 | 36,073 | 9,766 | 19,061 |
| Power | 5,010 | 29,658 | 28,677 | 8,460 | 16,393 |
| Vehicle | 792 | 4,688 | 7,396 | 1,306 | 2,668 |
| Home | 486 | 3,452 | 5,070 | 1,195 | 2,033 |
| Foreign | 306 | 1,236 | 2,326 | 111 | 635 |
| Transportation - Total | 14,237 | 69,175 | 71,099 | 16,626 | 38,394 |
| Supplies | 68 | 450 | 747 | 146 | 319 |
| Movement | 14,169 | 68,725 | 70,351 | 16,480 | 38,075 |
| Office - Total | 7,116 | 39,183 | 41,699 | 8,882 | 19,877 |
| Traffic | 2,527 | 13,914 | 14,807 | 3,154 | 7,058 |
| Directive | 4,589 | 25,269 | 26,892 | 5,728 | 12,818 |
| Taxes | 7,724 | 42,532 | 45,263 | 9,641 | 21,575 |
| Total | 79,483 | 431,367 | 465,419 | 93,429 | 214,131 |

* Expenses do not include Water Operations, Miscellaneous Operations and Loss and Damage Freight. Revenues not available by territories.

SECTION 4. INCOME

Analysis 4.4 Rail Carrier Freight Service Income
Western District - 1932 *

| | WESTERN TRUNK LINE (000) | SOUTH-WESTERN (000) | PACIFIC NORTH WEST (000) | PACIFIC SOUTH-WEST (000) |
|---|---|---|---|---|
| STATISTICS | | | | |
| Route Miles | 59 | 36 | 20 | 18 |
| Loaded Cars Handled - Road | 19,825 | 9,178 | 2,654 | 3,159 |
| Loaded Cars Handled - Yard | 26,141 | 13,175 | 3,968 | 6,594 |
| Terminal Cars | 8,296 | 4,391 | 1,573 | 2,147 |
| Equated Cars | 4,784 | 2,101 | 726 | 1,052 |
| Loaded Car Miles | 1,808 | 903 | 520 | 698 |
| Train Miles | 77,458 | 41,247 | 19,374 | 24,659 |
| Net Ton Miles (Revenue) | 35,080 | 17,746 | 10,328 | 11,737 |
| Gross Ton Miles | 125,502 | 64,167 | 37,313 | 45,027 |
| Vehicle Ton Miles | 108,130 | 55,307 | 31,763 | 38,343 |
| Yard Locomotive Hours | 6,025 | 2,270 | 1,146 | 1,453 |
| EXPENSES | | | | |
| Station - Total | $ 28,229 | $ 13,915 | $ 5,505 | $ 8,608 |
| Maintenance | 1,684 | 719 | 266 | 734 |
| Transportation | 26,545 | 13,195 | 5,239 | 7,874 |
| Yard - Total | 121,636 | 47,513 | 23,299 | 33,394 |
| Maintenance of Way and Struct. - Total | 9,699 | 3,196 | 2,063 | 1,625 |
| Roadway | 7,588 | 2,929 | 1,892 | 1,437 |
| Power Structure | 785 | 209 | 147 | 120 |
| Wharves and Docks | 1,325 | 58 | 24 | 68 |
| Maintenance of Equipment - Total | 64,309 | 27,351 | 12,540 | 18,646 |
| Power | 7,507 | 2,823 | 1,166 | 1,769 |
| Vehicle | 56,802 | 24,528 | 11,374 | 16,877 |
| Home | 42,674 | 15,809 | 8,423 | 11,906 |
| Foreign | 14,128 | 8,718 | 2,951 | 4,971 |
| Transportation - Total | 47,628 | 16,967 | 8,696 | 13,122 |
| Supplies | 5,231 | 1,372 | 1,231 | 1,419 |
| Switching | 42,350 | 15,498 | 7,414 | 11,355 |
| Floatage | 47 | 97 | 50 | 348 |
| Road - Total | 120,937 | 63,582 | 38,729 | 48,905 |
| Maintenance of Way and Struct. - Total | 34,574 | 19,682 | 11,089 | 11,990 |
| Roadway | 33,007 | 19,009 | 10,624 | 11,492 |
| Power Structures | 1,567 | 673 | 465 | 497 |
| Maintenance of Equipment - Total | 26,635 | 14,274 | 8,866 | 11,661 |
| Power | 21,723 | 11,420 | 7,441 | 9,373 |
| Vehicle | 5,112 | 2,853 | 1,425 | 2,289 |
| Home | 3,238 | 1,813 | 849 | 1,588 |
| Foreign | 1,874 | 1,040 | 576 | 701 |
| Transportation - Total | 59,527 | 29,626 | 18,774 | 25,254 |
| Supplies | 453 | 145 | 168 | 335 |
| Movement | 59,075 | 29,481 | 18,606 | 24,919 |
| Office - Total | 30,093 | 13,612 | 7,559 | 10,066 |
| Traffic | 10,686 | 4,833 | 2,684 | 3,575 |
| Directive | 19,407 | 8,778 | 4,875 | 6,492 |
| Taxes | 32,664 | 14,775 | 8,205 | 10,927 |
| Total | 333,559 | 153,396 | 83,297 | 111,899 |

* Expenses do not include Water Operations, Miscellaneous Operations and Loss and Damage Freight. Revenues not available by Territories.



SECTION 4. INCOME

Analysis 4.5 Water Carlot Carrier Freight Service Income - 1932 *

| | UNITED STATES (000) | ATLANTIC COAST (000) | ATLANTIC GULF (000) | INTER COASTAL (000) | INLAND WATERS (000) | GREAT LAKES (000) | PACIFIC COAST (000) |
|---|---|---|---|---|---|---|---|
| REVENUES | | | | | | | |
| Freight - Total | $102,407 | $ 24,767 | $ 13,299 | $ 38,946 | $ 8,571 | $ 7,404 | $ 9,420 |
| EXPENSES # | | | | | | | |
| Station | $ 14,920 | $ 4,069 | $ 2,057 | $ 4,730 | $ 1,969 | $ 897 | $ 1,198 |
| Maintenance | 2,138 | 871 | 375 | 493 | 284 | 67 | 48 |
| Transportation | 12,781 | 3,198 | 1,683 | 4,237 | 1,685 | 829 | 1,149 |
| Yard | $14,543 | $3,995 | $2,483 | $4,155 | $1,437 | $1,100 | $1,373 |
| Maintenance of Way | 1,878 | 284 | 848 | 327 | 185 | 99 | 135 |
| Power Structure | - | - | - | - | - | - | - |
| Wharves and Docks | - | - | - | - | - | - | - |
| Maintenance of Equipment | 7,526 | 1,567 | 861 | 2,745 | 742 | 758 | 853 |
| Transportation | 5,139 | 2,144 | 774 | 1,083 | 509 | 244 | 385 |
| Supplies | - | - | - | - | - | - | - |
| Switching | 3,915 | 1,414 | 438 | 1,007 | 494 | 244 | 318 |
| Floatage | 1,224 | 730 | 336 | 76 | 15 | - | 67 |
| Road | $ 52,912 | $ 10,874 | $ 8,314 | $ 20,969 | $ 3,359 | $ 3,743 | $ 5,653 |
| Maintenance of Way | - | - | - | - | - | - | - |
| Maintenance of Equipment | 6,981 | 1,745 | 2,057 | 1,397 | 856 | 453 | 473 |
| Power | - | - | - | - | - | - | - |
| Vehicle | - | - | - | - | - | - | - |
| Transportation | 45,930 | 9,129 | 6,257 | 19,572 | 2,503 | 3,290 | 5,179 |
| Supplies | 5,822 | 1,029 | 969 | 2,307 | 274 | 465 | 778 |
| Movement | 40,108 | 8,100 | 5,288 | 17,264 | 2,229 | 2,826 | 4,401 |
| Office | $27,163 | $ 4,439 | $ 2,319 | $ 12,403 | $ 1,377 | $ 2,591 | $ 4,034 |
| Traffic | 11,618 | 1,995 | 1,551 | 4,891 | 446 | 889 | 1,846 |
| Directive | 14,602 | 1,855 | 690 | 7,492 | 885 | 156 | 2,119 |
| Taxes | $ 944 | $ 589 | $ 78 | $ 20 | $ 47 | $ 141 | $ 69 |
| Total | $109,540 | $23,378 | $15,174 | $42,257 | $8,142 | $8,331 | $12,258 |
| NET RESULTS | $ L 7,133 | $ P 1,389 | $ L 1,874 | $ L 3,310 | $ P 428 | $ L 927 | $ L 12,838 |

* Includes 4 out of 5 companies.
\# Where both freight and passenger services were provided jointly, costs were prorated to each service on the basis of revenues derived.

SECTION 4. INCOME

Analysis 4.6 Water Cargo Carrier Freight Service Income - 1932

| | UNITED STATES (000) | ATLANTIC COAST (000) | ATLANTIC GULF (000) | INTER COASTAL (000) | INLAND WATERS (000) | GREAT LAKES (000) | PACIFIC COAST (000) |
|---|---|---|---|---|---|---|---|
| REVENUES | | | | | | | |
| Freight - Total | $ 17,174 | $ 3,278 | $ 1,227 | $ 183 | $ 1,010 | $ 11,099 | $ 377 |
| EXPENSES # | | | | | | | |
| Station | $ 1,319 | $ 48 | $ - | $ 70 | $ 8 | $ 1,096 | $ 97 |
| Maintenance | 25 | 2 | - | 14 | - | 9 | - |
| Transportation | 1,296 | 47 | - | 57 | 8 | 1,087 | 97 |
| Yard | $ 2,916 | $ 845 | $ 177 | $ 71 | $ 65 | $ 1,719 | $ 39 |
| Maintenance of Way | 115 | 69 | - | 23 | 2 | 21 | - |
| Power Structure | - | - | - | - | - | - | - |
| Wharves and Docks | - | - | - | - | - | - | - |
| Maintenance of Equipment | 2,380 | 472 | 171 | 43 | 50 | 1,605 | 39 |
| Transportation | 423 | 304 | 6 | 6 | 14 | 93 | - |
| Supplies | - | - | - | - | - | - | - |
| Switching | 133 | 16 | 6 | 6 | 14 | 91 | 0 |
| Floatage | 290 | 288 | - | - | 0 | 2 | - |
| Road | $ 14,573 | $ 2,908 | $ 815 | $ 143 | $ 314 | $ 9,858 | $ 535 |
| Maintenance of Way | - | - | - | - | - | - | - |
| Maintenance of Equipment | 1,132 | 399 | 52 | 8 | 19 | 634 | 20 |
| Power | - | - | - | - | - | - | - |
| Vehicle | - | - | - | - | - | - | - |
| Transportation | 13,439 | 2,509 | 762 | 135 | 295 | 9,223 | 515 |
| Supplies | 1,325 | 253 | 54 | 16 | 47 | 872 | 83 |
| Movement | 12,113 | 2,256 | 708 | 118 | 248 | 8,351 | 432 |
| Office | $ 3,121 | $ 495 | $ 3 | $ 33 | $ 86 | $ 2,408 | $ 96 |
| Traffic | 502 | 53 | 3 | 10 | 32 | 396 | 8 |
| Directive | 2,439 | 399 | - | 23 | 28 | 1,904 | 85 |
| Taxes | $ 179 | $ 42 | $ - | $ - | $ 26 | $ 108 | $ 3 |
| Total | $ 21,928 | $ 4,296 | $ 994 | $ 318 | $ 472 | $ 15,081 | $ 767 |
| NET RESULTS | $ L 4,754 | $ L 1,018 | $ P 233 | $ L 135 | $ P 537 | $ L3,982 | $ L 389 |

* Includes 4 out of 5 companies.

\# Where both freight and passenger services were provided jointly, costs were prorated to each service on the basis of revenues derived.



SECTION 4. INCOME

Analysis 4.7 Pipe Carrier Freight Service Income - Year 1932

| | UNITED STATES (000) | NORTH ATLANTIC COAST (000) | GREAT LAKES SOUTHWEST (000) | SOUTHWEST GULF (000) |
|---|---|---|---|---|
| REVENUES | | | | |
| Freight - Total | $ 211,789 | $ 9,294 | $ 100,144 | $ 102,351 |
| Raw Material | 199,756 | 6,489 | 91,649 | 101,618 |
| Auxiliaries | 12,033 | 2,805 | 8,494 | 733 |
| Total | $ 211,789 | $ 9,294 | $ 100,144 | $ 102,351 |
| EXPENSES | | | | |
| Maintenance - Total | $ 48,355 | $ 2,647 | $ 22,170 | $ 23,538 |
| Roadway | 29,336 | 2,133 | 14,108 | 13,095 |
| Power | 15,004 | 406 | 6,537 | 8,061 |
| Station | 4,015 | 107 | 1,525 | 2,382 |
| Transportation - Total | $ 27,901 | $ 2,552 | $ 12,698 | $ 12,651 |
| Movement | 17,219 | 1,334 | 8,369 | 7,546 |
| Assemblage | 9,077 | 1,070 | 3,606 | 4,402 |
| Station Agency | 1,575 | 148 | 723 | 703 |
| OVERHEAD - TOTAL | $ 25,709 | $ 1,558 | $ 13,617 | $ 10,534 |
| Administration | 9,657 | 855 | 4,178 | 4,624 |
| Taxes | 16,052 | 704 | 9,439 | 5,909 |
| GRAND TOTAL | $ 101,965 | $ 6,757 | $ 48,485 | $ 46,723 |
| NET RESULTS, PROFIT | $ 109,824 | $ 2,537 | $ 51,658 | $ 55,628 |

Source: Carrier reports to Interstate Commerce Commission

SECTION 6. AGGREGATE VOLUME

Analysis 6.1 Tonnage of American Products and Imports - Revised Classification*

| YEAR / COMMODITY GROUPS | 1928 TOTAL (000) | 1928 PRODUCTION (000) | 1928 IMPORTS (000) | 1932 TOTAL (000) | 1932 PRODUCTION (000) | 1932 IMPORTS (000) |
|---|---|---|---|---|---|---|
| ALL MATERIAL | 2,333,698 | 2,279,741 | 53,956 | 1,571,754 | 1,537,472 | 34,282 |
| I ROUGH MATERIAL | 364,199 | 360,956 | 3,243 | 233,242 | 231,643 | 1,598 |
| 10 Sand, Stone, Gravel | 306,092 | 306,092 | - | 175,852 | 175,852 | - |
| 11 Timber | 47,397 | 44,383 | 3,014 | 44,691 | 43,376 | 1,314 |
| 12 Rough Vegetables | 10,709 | 10,480 | 229 | 12,699 | 12,415 | 284 |
| 19 Miscellaneous | - | - | - | - | - | - |
| II RAW MATERIAL | 1,430,989 | 1,401,944 | 29,044 | 952,227 | 937,932 | 14,294 |
| 20 Grain | 148,677 | 147,097 | 1,580 | 139,891 | 138,943 | 948 |
| 21 Animal Feeds | 14,237 | 13,806 | 431 | 13,389 | 13,263 | 126 |
| 22 Fresh Vegetables | 19,254 | 17,529 | 1,725 | 17,698 | 16,383 | 1,315 |
| 23 Live Animals | 18,027 | 17,782 | 245 | 14,584 | 14,535 | 29 |
| 24 Dry Fuels | 718,137 | 716,512 | 1,625 | 480,901 | 479,737 | 1,163 |
| 25 Crude Liquids | 226,012 | 213,462 | 12,550 | 179,582 | 172,622 | 6,959 |
| 26 Ores | 213,073 | 206,923 | 6,149 | 74,451 | 72,262 | 2,188 |
| 27 Lumber | 45,367 | 43,470 | 1,897 | 16,991 | 16,440 | 551 |
| 28 Fertilizer | 28,198 | 25,359 | 2,839 | 14,736 | 13,743 | 993 |
| 29 Miscellaneous | - | - | - | - | - | - |
| III SEMIPROCESSED MATERIAL | 120,521 | 115,665 | 4,856 | 79,803 | 76,454 | 3,348 |
| 30 Primary Metals | 46,125 | 45,333 | 791 | 11,332 | 11,038 | 294 |
| 31 Fibres | 12,582 | 11,722 | 859 | 10,934 | 10,437 | 497 |
| 32 Hides | 573 | 317 | 255 | 414 | 317 | 96 |
| 33 Rubber | 677 | 173 | 503 | 578 | 108 | 470 |
| 34 Salt | 7,966 | 7,924 | 42 | 6,378 | 6,344 | 33 |
| 35 Ice | 42,877 | 42,877 | - | 43,268 | 43,268 | - |
| 36 Primary Paper | 6,292 | 4,115 | 2,176 | 4,984 | 3,185 | 1,799 |
| 37 Horticultural | 70 | 13 | 57 | 46 | 18 | 27 |
| 38 Scrap | 3,356 | 3,187 | 169 | 1,864 | 1,735 | 128 |
| 39 Miscellaneous | - | - | - | - | - | - |
| IV NECESSARIES | 109,479 | 98,282 | 11,196 | 103,621 | 95,186 | 8,434 |
| 40 Dry Vegetables | 22,786 | 22,228 | 557 | 19,183 | 18,957 | 226 |
| 41 Edible Liquids | 4,733 | 2,626 | 2,106 | 3,959 | 2,458 | 1,501 |
| 42 Edible Animal Products | 52,264 | 51,895 | 369 | 53,856 | 53,707 | 149 |
| 43 Manufactured Foods | 12,439 | 5,154 | 7,284 | 11,139 | 5,097 | 6,042 |
| 44 Processed Cereals | 12,906 | 12,905 | 1 | 12,364 | 12,364 | - |
| 45 Furnishings | 792 | 494 | 297 | 486 | 313 | 173 |
| 46 Textiles and Leather | 2,792 | 2,248 | 543 | 1,983 | 1,669 | 314 |
| 47 Clothing | 763 | 727 | 35 | 647 | 618 | 28 |
| 49 Miscellaneous | - | - | - | - | - | - |
| V AUXILIARIES | 224,795 | 219,960 | 4,834 | 164,858 | 158,654 | 6,204 |
| 50 Masonry | 84,128 | 83,545 | 583 | 39,288 | 39,160 | 127 |
| 51 Power | 102,226 | 100,605 | 1,621 | 97,718 | 93,529 | 4,189 |
| 52 Lubricants | 5,050 | 5,050 | - | 2,442 | 2,442 | - |
| 53 Kindlers | 25 | - | 25 | 13 | - | 13 |
| 54 Preservatives | 12,888 | 12,697 | 191 | 8,531 | 8,467 | 63 |
| 55 Chemicals, in tanks | 1,453 | 1,440 | 13 | 855 | 854 | 1 |
| 56 Chemicals, packaged | 13,093 | 12,947 | 145 | 11,030 | 10,887 | 143 |
| 57 Cleansers and Adhesives | 3,504 | 3,464 | 39 | 3,206 | 3,193 | 12 |
| 58 Explosives | 209 | 207 | 2 | 118 | 116 | 1 |
| 59 Miscellaneous | 2,214 | 2 | 2,212 | 1,653 | 1 | 1,652 |
| VI ACCESSORIES | 83,713 | 82,932 | 780 | 38,002 | 37,600 | 401 |
| 60 Ferrous Metal | 54,554 | 53,990 | 564 | 23,408 | 23,170 | 237 |
| 61 Nonferrous Metals | 6,356 | 6,313 | 42 | 3,334 | 3,249 | 84 |
| 62 Rubber | 1,671 | 1,670 | 1 | 1,191 | 1,191 | 1 |
| 63 Tools and Appliances | 963 | 865 | 98 | 563 | 538 | 24 |
| 64 Machinery and Parts | 4,744 | 4,740 | 3 | 2,628 | 2,628 | - |
| 65 Vehicles and Parts | 9,576 | 9,574 | 1 | 2,882 | 2,882 | 1 |
| 66 Stationery, Printing | 5,133 | 5,131 | 2 | 3,373 | 3,372 | 1 |
| 67 Personal | 546 | 480 | 66 | 485 | 434 | 51 |
| 68 Amusement | 165 | 165 | - | 134 | 132 | 1 |
| 69 Miscellaneous | - | - | - | - | - | - |

*Certain tonnages included in Groups 20, 21, 26, 37, 43, 46, 47, 50, 59, 61 of Analysis 6.2 are here allocated to proper cognate groups.

SECTION 6. AGGREGATE VOLUME

Analysis 6.2 Tonnage of American Product and Imports - Reconciled with I.C.C. Commodity Classification

| YEAR / COMMODITY GROUPS | 1928 TOTAL (000) | 1928 PRODUCTION (000) | 1928 IMPORTS (000) | 1932 TOTAL (000) | 1932 PRODUCTION (000) | 1932 IMPORTS (000) |
|---|---|---|---|---|---|---|
| ALL MATERIAL | 2,333,698 | 2,279,741 | 53,956 | 1,571,754 | 1,537,472 | 34,282 |
| I ROUGH MATERIAL | 360,590 | 357,576 | 3,014 | 229,613 | 228,298 | 1,314 |
| 10 Sand, Stone, Gravel | 306,092 | 306,092 | - | 175,852 | 175,852 | - |
| 11 Timber | 47,397 | 44,383 | 3,014 | 44,691 | 43,376 | 1,314 |
| 12 Rough Vegetables | 7,101 | 7,101 | - | 9,070 | 9,070 | - |
| 19 Miscellaneous* | - | - | - | - | - | - |
| II RAW MATERIAL | 1,432,136 | 1,400,848 | 31,288 | 953,682 | 937,527 | 16,155 |
| 20 Grain | 152,286 | 150,477 | 1,809 | 143,520 | 142,288 | 1,232 |
| 21 Animal Feeds | 14,237 | 13,806 | 431 | 13,389 | 13,263 | 126 |
| 22 Fresh Vegetables | 19,254 | 17,529 | 1,725 | 17,698 | 16,383 | 1,315 |
| 23 Live Animals | 18,027 | 17,782 | 245 | 14,584 | 14,535 | 49 |
| 24 Dry Fuels | 718,137 | 716,512 | 1,625 | 480,901 | 479,737 | 1,163 |
| 25 Crude Liquids | 226,012 | 213,462 | 12,550 | 179,582 | 172,622 | 6,959 |
| 26 Ores | 213,188 | 206,959 | 6,229 | 74,474 | 72,272 | 2,202 |
| 27 Lumber | 42,791 | 38,959 | 3,831 | 14,795 | 12,680 | 2,114 |
| 28 Fertilizer | 28,198 | 25,359 | 2,839 | 14,736 | 13,743 | 993 |
| 29 Miscellaneous* | - | - | - | - | - | - |
| III SEMIPROCESSED MATERIAL | 119,307 | 114,184 | 5,122 | 79,122 | 75,686 | 3,436 |
| 30 Primary Metals | 45,335 | 44,552 | 782 | 11,043 | 10,750 | 293 |
| 31 Fibres | 12,300 | 11,441 | 859 | 10,739 | 10,242 | 497 |
| 32 Hides | 573 | 317 | 255 | 414 | 317 | 96 |
| 33 Rubber | 503 | - | 503 | 470 | - | 470 |
| 34 Salt | 7,966 | 7,924 | 42 | 6,378 | 6,344 | 33 |
| 35 Ice | 42,877 | 42,877 | - | 43,268 | 43,268 | - |
| 36 Primary Paper | 6,292 | 4,115 | 2,176 | 4,984 | 3,185 | 1,799 |
| 37 Horticultural | 113 | - | 113 | 72 | - | 72 |
| 38 Scrap | 3,344 | 2,955 | 389 | 1,750 | 1,578 | 172 |
| 39 Miscellaneous* | - | - | - | - | - | - |
| IV NECESSARIES | 106,074 | 95,120 | 10,954 | 101,070 | 92,771 | 8,299 |
| 40 Dry Vegetables | 22,786 | 22,228 | 557 | 19,183 | 18,957 | 226 |
| 41 Edible Liquids | 4,652 | 2,545 | 2,106 | 3,888 | 2,387 | 1,501 |
| 42 Edible Animal Products | 49,940 | 49,569 | 370 | 51,834 | 51,684 | 150 |
| 43 Manufactured Foods | 13,492 | 6,205 | 7,286 | 12,207 | 6,165 | 6,041 |
| 44 Processed Cereals | 12,909 | 12,905 | 4 | 12,367 | 12,364 | 2 |
| 45 Furnishings | 17 | - | 17 | 12 | - | 12 |
| 46 Textiles and Leather | 2,231 | 1,665 | 566 | 1,538 | 1,212 | 326 |
| 47 Clothing* | 44 | - | 44 | 37 | - | 37 |
| 49 Miscellaneous* | - | - | - | - | - | - |
| V AUXILIARIES | 242,635 | 239,691 | 2,943 | 176,233 | 171,499 | 4,734 |
| 50 Masonry | 83,738 | 83,189 | 548 | 38,946 | 38,821 | 124 |
| 51 Power | 65,744 | 64,122 | 1,621 | 62,076 | 57,887 | 4,189 |
| 52 Lubricants | 5,050 | 5,050 | - | 2,442 | 2,442 | - |
| 53 Kindlers* | - | - | - | - | - | - |
| 54 Preservatives | 11,619 | 11,427 | 191 | 7,650 | 7,587 | 63 |
| 55 Chemicals, in tanks | 1,453 | 1,440 | 13 | 855 | 854 | 1 |
| 56 Chemicals, packaged | 230 | 224 | 5 | 172 | 166 | 5 |
| 57 Cleansers and Adhesives | 2,989 | 2,949 | 39 | 2,828 | 2,815 | 12 |
| 58 Explosives | 209 | 207 | 2 | 118 | 116 | 1 |
| 59 Miscellaneous# | 71,599 | 71,078 | 521 | 61,143 | 60,806 | 336 |
| VI ACCESSORIES | 72,953 | 72,320 | 633 | 32,032 | 31,689 | 342 |
| 60 Ferrous Metal | 55,121 | 54,549 | 571 | 23,558 | 23,312 | 245 |
| 61 Nonferrous Metals | 2,469 | 2,426 | 42 | 1,081 | 997 | 83 |
| 62 Rubber | 1,549 | 1,548 | 1 | 1,094 | 1,093 | 1 |
| 63 Tools and Appliances | - | - | - | - | - | - |
| 64 Machinery and Parts | 3,688 | 3,684 | 3 | 1,996 | 1,995 | - |
| 65 Vehicles and Parts | 7,374 | 7,372 | 1 | 2,403 | 2,402 | 1 |
| 66 Stationery, Printing | 2,327 | 2,318 | 9 | 1,519 | 1,509 | 10 |
| 67 Personal | 422 | 420 | 2 | 379 | 378 | 1 |
| 68 Amusement* | - | - | - | - | - | - |
| 69 Miscellaneous* | - | - | - | - | - | - |

*Included in No. 59

#Includes all Miscellaneous Manufactures - Group 701.

Principal source of information "Statistical Abstract of United States", 1930 and 1934 editions.

## SECTION 6. AGGREGATE VOLUME

Analysis 6.3 Supply and Demand of Petroleum - 1932

| | MILLIONS OF BARRELS | | |
|---|---|---|---|
| | TOTAL | CRUDE | REFINED PRODUCTS |
| **Stock on hand January 1, 1932** | 632 | 370 | 262 |
| **Production - 1932** | 1,651 | 822* | 829 |
| **Imports - 1932** | 74 | 45 | 30 |
| **Exports - 1932** | 103 | 27 | 76 |
| **To Refineries** | 846 | 846* | - |
| **Domestic Consumption** | 836 | 31 | 805 |
| **Motor Fuel** | 374 | - | 374 |
| **Fuel Oil** | 339 | 31 | 308 |
| **Still Gas** | 41 | - | 41 |
| **Kerosene** | 33 | - | 33 |
| **Lubricants** | 17 | - | 17 |
| **Asphalt** | 13 | - | 13 |
| **Petroleum Coke** | - | - | 10 |
| **Road Oil** | 7 | - | 7 |
| **Wax** | 1 | - | 1 |
| **Miscellaneous** | 2 | - | 2 |
| **Stock on hand December 31, 1932** | 590 | 340 | 250 |

* Includes 37 million barrels of natural products.
# Includes 26 million barrels of natural products.



## SECTION 7. CARRIER DISTRIBUTION

Analysis 7.1 Freight Tonnage Originated and Reported by Carriers - 1932

| COMMODITY GROUP | TOTAL | RAIL CAR LOT (000) | WATER CAR LOT (000) | WATER CARGO (000) | PIPE CARGO (000) |
|---|---|---|---|---|---|
| ALL COMMODITIES | 759,020 | 630,989 | 15,584 | 29,620 | 82,828 |
| I ROUGH MATERIAL | 66,167 | 63,064 | 6 | 3,097 | 0 |
| 10 Sand, Stone, Gravel | | 46,641 | | | |
| 11 Timber | | 10,920 | | | |
| 12 Rough Vegetables | | 5,503 | | | |
| 19 Miscellaneous* | | - | | | |
| II RAW MATERIAL | 507,928 | 400,169 | 3,340 | 24,418 | 80,001 |
| 20 Grain | | 36,650 | | | |
| 21 Animal Foods | | 8,125 | | | |
| 22 Fresh Vegetables | | 7,874 | | | |
| 23 Live Animals | | 10,212 | | | |
| 24 Dry Fuels | | 282,599 | | | |
| 25 Crude Liquids | | 10,860 | | | |
| 26 Ores | | 23,011 | | | |
| 27 Lumber | | 12,817 | | | |
| 28 Fertilizer | | 8,021 | | | |
| 29 Miscellaneous* | | - | | | |
| III SEMIPROCESSED MATERIAL | 24,744 | 23,629 | 1,025 | 90 | 0 |
| 30 Primary Metals | | 3,489 | | | |
| 31 Fibre | | 6,212 | | | |
| 32 Hides | | 631 | | | |
| 33 Rubber | | 378 | | | |
| 34 Salt | | 2,576 | | | |
| 35 Ice | | 1,464 | | | |
| 36 Primary Paper | | 2,213 | | | |
| 37 Horticultural | | 367 | | | |
| 38 Scrap | | 6,269 | | | |
| 39 Miscellaneous* | | - | | | |
| IV NECESSARIES | 40,083 | 33,854 | 5,909 | 320 | 0 |
| 40 Dry Vegetables | | 6,019 | | | |
| 41 Edible Liquids | | 2,680 | | | |
| 42 Edible Animal Products | | 6,000 | | | |
| 43 Manufactured Foods | | 6,893 | | | |
| 44 Processed Cereals | | 10,021 | | | |
| 45 Furnishings | | 1,513 | | | |
| 46 Textiles and Leather | | 725 | | | |
| 47 Clothing* | | - | | | |
| 49 Miscellaneous* | | - | | | |
| V AUXILIARIES | 100,972 | 92,684 | 4,392 | 1,070 | 2,826 |
| 50 Masonry | | 20,488 | | | |
| 51 Power | | 35,888 | | | |
| 52 Lubricants | | 2,577 | | | |
| 53 Kindlers* | | - | | | |
| 54 Preservatives | | 3,353 | | | |
| 55 Chemicals, in tanks | | 1,444 | | | |
| 56 Chemicals, packaged | | 104 | | | |
| 57 Cleansers and Adhesives | | 983 | | | |
| 58 Explosives | | 136 | | | |
| 59 Miscellaneous# | | 27,711 | | | |
| VI ACCESSORIES | 19,123 | 17,589 | 910 | 624 | 0 |
| 60 Ferrous Metal | | 12,263 | | | |
| 61 Non-ferrous Metals | | 106 | | | |
| 62 Rubber | | 222 | | | |
| 63 Tools and Appliances* | | - | | | |
| 64 Machinery and Parts | | 1,254 | | | |
| 65 Vehicles and Parts | | 2,365 | | | |
| 66 Stationery, Printing | | 1,227 | | | |
| 67 Personal | | 152 | | | |
| 68 Amusement* | | - | | | |
| 69 Miscellaneous | | - | | | |

* Included in No. 59.
# Includes all Miscellaneous Manufactures - I.C.C. Group 701.

## SECTION 7. CARRIER DISTRIBUTION

### Analysis 7.2 Freight Tonnage Reported by Shippers - 1933#

| BUSINESS GROUPS | OUTBOUND TONNAGE AGGREGATE (000) | OUTBOUND TONNAGE PERCENTAGE BY RAIL WAY | OUTBOUND TONNAGE PERCENTAGE BY HIGH WAY | OUTBOUND TONNAGE PERCENTAGE BY WATER | INBOUND TONNAGE AGGREGATE (000) | INBOUND TONNAGE PERCENTAGE BY RAIL WAY | INBOUND TONNAGE PERCENTAGE BY HIGH WAY | INBOUND TONNAGE PERCENTAGE BY WATER | INBOUND FUEL AGGREGATE (000) | INBOUND FUEL PERCENTAGE BY RAIL WAY | INBOUND FUEL PERCENTAGE BY HIGH WAY | INBOUND FUEL PERCENTAGE BY WATER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | 160,792 | 82% | 6% | 12% | 87,167 | 77% | 6% | 17% | 42,244 | 78% | 3% | 19% |
| I ROUGH MATERIAL* | 11,700 | 54% | 14% | 32% | 499 | 76% | 17% | 7% | 151 | 57% | 10% | 33% |
| 34 Sand, Stone, Gravel | 11,495 | 53 | 14 | 33 | 415 | 74 | 17 | 9 | 150 | 57 | 10 | 33 |
| 8b Timber | 204 | 93 | 1 | 6 | 84 | 85 | 15 | - | 1 | 100 | - | - |
| II RAW MATERIAL* | 51,462 | 93% | 2% | 5% | 11,828 | 87% | 9% | 4% | 3,994 | 67% | 1% | 32% |
| 10aGrain | 1,615 | 83 | # | 17 | 1,447 | 93 | # | 7 | 7 | 100 | - | - |
| 16 Fresh Fruits & Vegetables | 1,353 | 67 | 18 | 15 | 1,077 | 60 | 22 | 18 | 6 | 99 | 1 | - |
| 22 Livestock and Poultry | 117 | 68 | 32 | # | 712 | 38 | 62 | # | 2 | 57 | 43 | - |
| 12 Coal, Coke and Fuel | 38,704 | 97 | 1 | 2 | 3,306 | 95 | 4 | 1 | 3,155 | 61 | # | 39 |
| 26 Ores and Concentrates | 5,090 | 78 | # | 22 | 2,742 | 99 | 1 | - | 632 | 93 | 1 | 6 |
| 8a Lumber | 4,385 | 85 | 2 | 13 | 2,275 | 87 | 9 | 4 | 173 | 95 | 3 | 2 |
| 03 Barrels, Cooperage Material | 198 | 87 | 10 | 3 | 270 | 64 | 27 | 9 | 19 | 88 | 11 | 1 |
| III SEMIPROCESSED MATERIAL* | 3,688 | 77% | 16% | 7% | 5,493 | 75% | 11% | 14% | 3,267 | 85% | 2% | 13% |
| 13 Cotton, Cotton Linters | 584 | 87 | 8 | 5 | 567 | 75 | 25 | # | 108 | 98 | 2 | - |
| 29 Paper, Paper Products | 3,073 | 75 | 17 | 8 | 5,211 | 75 | 10 | 15 | 3,155 | 84 | 3 | 13 |
| 35 Horticultural Material | 31 | 88 | 11 | 1 | 15 | 89 | 10 | 1 | 4 | 100 | - | - |
| IV NECESSARIES* | 20,418 | 85% | 9% | 6% | 23,262 | 83% | 7% | 10% | 7,068 | 78% | 5% | 17% |
| 04 Beverages and Liquors | 599 | 57 | 42 | 1 | 388 | 88 | 12 | # | 76 | 42 | 54 | 4 |
| 36 Sugar, Syrups and Molasses | 2,182 | 77 | 10 | 13 | 6,397 | 86 | 7 | 7 | 1,200 | 95 | # | 5 |
| 39 Vegetable Oil, Meal & Cake | 739 | 78 | 12 | 10 | 545 | 71 | 22 | 7 | 76 | 93 | 7 | - |
| 27 Packing House Products | 4,249 | 93 | 7 | - | 1,954 | 93 | 7 | # | 1,230 | 95 | 4 | 1 |
| 02 Bakery Goods, Confectionery | 436 | 66 | 20 | 14 | 844 | 61 | 19 | 20 | 206 | 89 | 3 | 8 |
| 09 Canned Goods | 793 | 73 | 18 | 9 | 394 | 52 | 38 | 10 | 1,155 | 12 | 1 | 87 |
| 18 Groceries | 847 | 52 | 37 | 11 | 1,320 | 75 | 17 | 8 | 195 | 97 | 3 | - |
| 10bCereals, Flour, Mill Products | 9,209 | 94 | 3 | 3 | 8,596 | 92 | 2 | 6 | 596 | 94 | 2 | 4 |
| 17 Furniture and Furnishings | 146 | 77 | 14 | 9 | 282 | 84 | 14 | 2 | 178 | 87 | 4 | 9 |
| 31 Porcelain, China, etc. | 59 | 90 | 8 | 2 | 22 | 97 | 3 | # | 71 | 99 | 1 | - |
| 21 Leather and Leather Goods | 153 | 80 | 18 | 2 | 149 | 94 | 4 | 2 | 325 | 88 | 9 | 3 |
| 37 Textiles | 528 | 79 | 15 | 6 | 1,998 | 47 | 9 | 44 | 1,640 | 88 | 11 | 1 |
| 07 Boots and Shoes | 349 | 9 | 5 | 86 | 107 | 67 | 31 | 2 | 51 | 82 | 1 | 17 |
| 15 Dry Goods, Clothing | 30 | 66 | 24 | 10 | 65 | 82 | 13 | 5 | 68 | 69 | 31 | # |
| V AUXILIARIES* | 58,657 | 78% | 5% | 17% | 21,590 | 70% | 3% | 27% | 18,033 | 80% | 3% | 17% |
| 8a Masonry Materials (except wood) | 12,048 | 92 | 5 | 3 | 3,520 | 88 | 3 | 9 | 2,188 | 88 | 3 | 9 |
| 30 Petroleum, Crude and Refined | 31,229 | 68 | 4 | 28 | 5,788 | 33 | 1 | 66 | 405 | 33 | 17 | 50 |
| 28 Paints, Varnishes and Gums | 49 | 53 | 44 | 3 | 111 | 86 | 11 | 3 | 36 | 93 | 7 | - |
| 11 Chemicals | 3,351 | 91 | 7 | 2 | 3,030 | 65 | 2 | 33 | 426 | 97 | 1 | 2 |
| 40 Miscellaneous Commodities | 11,980 | 87 | 8 | 5 | 9,140 | 87 | 5 | 8 | 14,978 | 80 | 2 | 18 |
| VI ACCESSORIES* | 14,866 | 82% | 12% | 6% | 24,195 | 73% | 5% | 22% | 9,732 | 71% | 3% | 23% |
| 19 Iron and Steel, Structural | 2,759 | 87 | 8 | 5 | 5,772 | 70 | # | 30 | 2,832 | 30 | # | 70 |
| 20 Iron and Steel Articles | 7,240 | 86 | 9 | 5 | 9,850 | 66 | 3 | 31 | 2,845 | 96 | 1 | 3 |
| 24 Metals, Non-ferrous | 705 | 78 | 11 | 11 | 723 | 93 | 5 | 2 | 493 | 79 | 20 | 1 |
| 33 Rubber, Rubber Articles, Tires | 390 | 62 | 33 | 5 | 655 | 88 | 8 | 4 | 539 | 93 | 6 | 1 |
| 23 Machinery, Vehicles, etc. | 1,520 | 90 | 6 | 4 | 2,173 | 96 | 3 | 1 | 1,280 | 85 | 4 | 11 |
| 32 Plumbing and Heating Supplies | 129 | 78 | 12 | 10 | 269 | 92 | 2 | 6 | 131 | 98 | 1 | 1 |
| 01 Automotive Vehicles & Parts | 1,557 | 58 | 39 | 3 | 3,489 | 67 | 18 | 15 | 1,285 | 94 | 1 | 5 |
| 05 Boats, Marine Equipment | 4 | 92 | 3 | 5 | 80 | 98 | # | 2 | 71 | 99 | 1 | - |
| 06 Books and Periodicals | 161 | 56 | 17 | 27 | 630 | 92 | 4 | 4 | 30 | 100 | - | - |
| 14 Department Store Merchandise | 167 | 82 | 8 | 10 | 226 | 88 | 8 | 4 | 74 | 92 | 8 | - |
| 38 Tobacco, Tobacco Products | 233 | 84 | 4 | 12 | 328 | 92 | 6 | 2 | 150 | 98 | 2 | - |
| 25 Musical Instruments & Supplies | 1 | 96 | 4 | - | 1 | 83 | 17 | - | 4 | 100 | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# As reported by respondents to Shippers' Inquiry.
# Less than ½%.



## SECTION 7. CARRIER DISTRIBUTION

### Analysis 7.3 Freight Ton Miles Reported by Shippers - 1933#

| BUSINESS GROUPS | OUTBOUND TON MILES AGGREGATE # | OUTBOUND TON MILES PERCENTAGE BY RAIL WAY | OUTBOUND TON MILES PERCENTAGE BY HIGH WAY | OUTBOUND TON MILES PERCENTAGE BY WATER | INBOUND TON MILES AGGREGATE # | INBOUND TON MILES PERCENTAGE BY RAIL WAY | INBOUND TON MILES PERCENTAGE BY HIGH WAY | INBOUND TON MILES PERCENTAGE BY WATER | INBOUND FUEL TON MILES AGGREGATE # | INBOUND FUEL TON MILES PERCENTAGE BY RAIL WAY | INBOUND FUEL TON MILES PERCENTAGE BY HIGH WAY | INBOUND FUEL TON MILES PERCENTAGE BY WATER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | 66,928 | 69% | 2% | 29% | 36,729 | 58% | 2% | 40% | 9,101 | 76% | 1% | 23% |
| I ROUGH MATERIAL* | 1,789 | 37% | 1% | 62% | 79 | 81% | 3% | 16% | 35 | 41% | 3% | 56% |
| 34 Sand, Stone, Gravel | 1,647 | 35 | 1 | 64 | 46 | 73 | 2 | 25 | 35 | 41 | 3 | 56 |
| 8b Timber | 142 | 67 | 1 | 32 | 33 | 99 | 1 | - | - | 100 | - | - |
| II RAW MATERIAL* | 20,113 | 80% | 1% | 19% | 4,020 | 88% | 3% | 9% | 618 | 89% | 8% | 11% |
| 10aGrain | 669 | 67 | # | 33 | 559 | 85 | # | 15 | 1 | 100 | - | - |
| 16 Fresh Fruits & Vegetables | 1,441 | 75 | 7 | 18 | 1,095 | 78 | 4 | 18 | 1 | 100 | # | - |
| 22 Livestock & Poultry | 74 | 97 | 3 | # | 126 | 78 | 19 | 3 | - | 80 | 20 | - |
| 12 Coal, Coke & Fuel | 11,080 | 98 | # | 2 | 750 | 94 | 4 | 2 | 439 | 84 | # | 16 |
| 26 Ores & Concentrates | 2,963 | 43 | # | 57 | 743 | 100 | # | - | 141 | 100 | # | # |
| 8c Lumber | 3,806 | 62 | # | 38 | 676 | 92 | 2 | 6 | 30 | 94 | 1 | 5 |
| 03 Barrels, Cooperage Material | 77,237 | 96 | 1 | 3 | 68 | 69 | 5 | 26 | 3 | 99 | 1 | # |
| III SEMI-PROCESSED MATERIAL* | 1,828 | 77% | 3% | 20% | 2,685 | 66% | 2% | 32% | 640 | 88% | 8% | 12% |
| 13 Cotton, Cotton Linters | 276 | 91 | 2 | 7 | 121 | 88 | 12 | # | 25 | 100 | # | - |
| 29 Paper, Paper Products | 1,514 | 74 | 3 | 23 | 2,558 | 65 | 1 | 34 | 613 | 88 | # | 12 |
| 35 Horticultural Material | 37 | 96 | 1 | 3 | 5 | 96 | 4 | # | 1 | 100 | - | - |
| IV NECESSARIES* | 12,181 | 86% | 2% | 12% | 8,494 | 80% | 2% | 18% | 1,350 | 85% | 8% | 15% |
| 04 Beverages & Liquors | 287 | 86 | 13 | 1 | 194 | 94 | 5 | 1 | 5 | 81 | 14 | 5 |
| 36 Sugar, Syrups & Molasses | 1,119 | 83 | 2 | 15 | 1,098 | 85 | # | 15 | 388 | 62 | # | 38 |
| 39 Vegetable Oil, Meal & Cake | 552 | 50 | 2 | 48 | 265 | 33 | 2 | 65 | 18 | 98 | 2 | - |
| 27 Packing House Products | 3,572 | 98 | 2 | # | 1,021 | 96 | 3 | 1 | 218 | 98 | # | 2 |
| 02 Bakery Goods, Confectionery | 235 | 65 | 5 | 30 | 424 | 52 | 7 | 41 | 66 | 81 | # | 19 |
| 09 Canned Goods | 734 | 61 | 3 | 36 | 169 | 65 | 7 | 28 | 51 | 80 | # | 20 |
| 18 Groceries | 399 | 54 | 19 | 27 | 820 | 59 | 6 | 35 | 33 | 100 | # | - |
| 10bCereals, Flour, Mill Products | 4,696 | 92 | 1 | 7 | 3,560 | 85 | # | 15 | 105 | 95 | # | 5 |
| 17 Furniture & Furnishings | 73 | 76 | 5 | 19 | 117 | 90 | 3 | 7 | 49 | 82 | 1 | 17 |
| 31 Porcelain, China, etc. | 18 | 87 | 3 | 10 | 16 | 100 | # | # | 11 | 100 | # | - |
| 21 Leather & Leather Goods | 54 | 93 | 4 | 3 | 232 | 95 | # | 5 | 80 | 96 | 1 | 3 |
| 37 Textiles | 250 | 79 | 5 | 16 | 511 | 81 | 3 | 16 | 262 | 98 | 2 | # |
| 07 Boots & Shoes | 158 | 4 | 2 | 94 | 25 | 86 | 6 | 8 | 14 | 70 | # | 30 |
| 15 Dry Goods, Clothing | 28 | 54 | 3 | 43 | 34 | 94 | 3 | 3 | 13 | 97 | 3 | # |
| V AUXILIARIES* | 25,599 | 54% | 1% | 45% | 13,242 | 33% | #% | 67% | 4,786 | 67% | 1% | 32% |
| 8a Masonry Materials (except wood) | 2,674 | 93 | 5 | 2 | 720 | 70 | 1 | 29 | 492 | 76 | # | 24 |
| 30 Petroleum, Crude & Refined | 16,653 | 35 | # | 65 | 7,798 | 10 | # | 90 | 583 | 4 | # | 96 |
| 28 Paints, Varnishes & Gums | 21 | 75 | 16 | 9 | 95 | 92 | 1 | 7 | 9 | 99 | 1 | - |
| 11 Chemicals | 1,014 | 90 | 3 | 7 | 1,095 | 33 | # | 67 | 61 | 100 | # | # |
| 40 Miscellaneous | 5,236 | 86 | 2 | 12 | 3,531 | 76 | 1 | 23 | 3,638 | 76 | 1 | 23 |
| VI ACCESSORIES* | 5,416 | 76% | 5% | 19% | 8,206 | 58% | 2% | 40% | 1,668 | 85% | 8% | 15% |
| 19 Iron & Steel, Structural | 892 | 71 | 5 | 24 | 1,593 | 37 | # | 63 | 278 | 49 | # | 51 |
| 20 Iron & Steel Articles | 1,863 | 73 | 3 | 24 | 2,799 | 35 | 1 | 64 | 419 | 93 | # | 7 |
| 24 Metals, Non-ferrous | 434 | 63 | 2 | 35 | 306 | 93 | 1 | 6 | 117 | 98 | 2 | # |
| 33 Rubber, Rubber Articles, Tires | 261 | 63 | 19 | 18 | 393 | 84 | 3 | 13 | 85 | 98 | 1 | 1 |
| 23 Machinery, Vehicles, etc. | 898 | 91 | 2 | 7 | 885 | 88 | 1 | 11 | 257 | 86 | # | 14 |
| 32 Plumbing & Heating Supplies | 91 | 77 | 4 | 19 | 193 | 64 | # | 36 | 33 | 86 | # | 14 |
| 01 Automotive Vehicles & Parts | 534 | 82 | 12 | 6 | 1,354 | 81 | 7 | 12 | 383 | 93 | # | 7 |
| 05 Boats, Marine Equipment | 9 | 98 | # | 2 | 22 | 87 | # | 13 | 22 | 100 | # | - |
| 06 Books & Periodicals | 129 | 69 | 4 | 27 | 426 | 91 | 1 | 8 | 4 | 100 | - | - |
| 14 Department Store Merchandise | 152 | 76 | 2 | 22 | 102 | 74 | 2 | 24 | 20 | 100 | # | - |
| 38 Tobacco, Tobacco Products | 149 | 89 | 3 | 8 | 128 | 94 | 2 | 4 | 45 | 100 | # | - |
| 25 Musical Instruments & Supplies | # | 89 | 11 | - | # | 91 | 9 | - | # | 100 | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# As reported by respondents to Shippers' Inquiry.
# Less than ½%.
# Less than 500,000 Ton Miles.
# All aggregates are shown in millions.

SECTION 7. CARRIER DISTRIBUTION

Analysis 7.4 Average Haul (In Miles) Reported by Shippers - 1933#

| BUSINESS GROUP | OUTBOUND SHIPMENTS AVERAGE HAUL RAIL-WAY | OUTBOUND SHIPMENTS AVERAGE HAUL HIGH-WAY | OUTBOUND SHIPMENTS AVERAGE HAUL WATER | INBOUND SHIPMENTS AVERAGE HAUL RAIL-WAY | INBOUND SHIPMENTS AVERAGE HAUL HIGH-WAY | INBOUND SHIPMENTS AVERAGE HAUL WATER | INBOUND FUEL SHIPMENTS AVERAGE HAUL RAIL-WAY | INBOUND FUEL SHIPMENTS AVERAGE HAUL HIGH-WAY | INBOUND FUEL SHIPMENTS AVERAGE HAUL WATER |
|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | 320 | 99 | 999 | 351 | 116 | 1,026 | 211 | 39 | 237 |
| I ROUGH MATERIAL* | 105 | 14 | 289 | 176 | 16 | 310 | 172 | 70 | 400 |
| 34 Sand, Stone, Gravel | 93 | 14 | 278 | 110 | 14 | 311 | 172 | 70 | 400 |
| 8b Timber | 505 | - | 3,246 | 462 | 261 | - | 196 | - | - |
| II RAW MATERIAL* | 339 | 160 | 1,306 | 345 | 111 | 783 | 203 | 29 | 55 |
| 10aGrain | 335 | 59 | 799 | 354 | 165 | 815 | 258 | - | - |
| 16 Fresh Fruits & Vegetables | 1,184 | 435 | 1,286 | 1,322 | 198 | 1,020 | 173 | 108 | - |
| 22 Livestock & Poultry | 900 | 55 | 805 | 365 | 55 | 954 | 222 | 71 | - |
| 12 Coal, Coke & Fuel | 290 | 31 | 257 | 225 | 252 | 294 | 194 | 24 | 55 |
| 26 Ores & Concentrates | 322 | 139 | 1,516 | 274 | 22 | - | 241 | 13 | - |
| 8a Lumber | 631 | 79 | 2,562 | 314 | 74 | 461 | 177 | 42 | 486 |
| 03 Barrels, Cooperage Material | 434 | 45 | 279 | 273 | 46 | 702 | 196 | 17 | 75 |
| III SEMIPROCESSED MATERIAL* | 495 | 82 | 1,351 | 411 | 66 | 1,070 | 204 | 28 | 177 |
| 13 Cotton, Cotton Linters | 497 | 96 | 618 | 249 | 109 | 90 | 245 | 21 | - |
| 29 Paper, Paper Products | 485 | 81 | 1,446 | 429 | 55 | 1,071 | 202 | 28 | 177 |
| 35 Horticultural Material | 1,308 | 147 | 1,780 | 420 | 136 | 90 | 394 | - | - |
| IV NECESSARIES* | 601 | 163 | 1,162 | 354 | 102 | 655 | 207 | 26 | 168 |
| 04 Beverages & Liquors | 726 | 148 | 464 | 535 | 234 | 923 | 147 | 19 | 100 |
| 36 Sugar, Syrups & Molasses | 557 | 71 | 580 | 172 | 11 | 364 | 212 | 37 | 2,334 |
| 39 Vegetable Oil, Meal & Cake | 486 | 102 | 3,612 | 225 | 37 | 4,361 | 259 | 64 | - |
| 27 Packing House Products | 867 | 249 | 121 | 548 | 193 | 1,062 | 207 | 29 | 369 |
| 02 Bakery Goods, Confectionery | 533 | 141 | 1,173 | 429 | 193 | 1,035 | 292 | 161 | 774 |
| 09 Canned Goods | 769 | 179 | 3,652 | 542 | 78 | 1,154 | 303 | 20 | 10 |
| 18 Groceries | 490 | 235 | 1,212 | 491 | 235 | 2,551 | 175 | 11 | - |
| 10bCereals, Flour, Mill Products | 500 | 84 | 1,212 | 381 | 69 | 965 | 179 | 16 | 204 |
| 17 Furniture & Furnishings | 490 | 193 | 1,092 | 444 | 96 | 1,448 | 263 | 56 | 500 |
| 31 Porcelain, China, etc. | 299 | 125 | 1,787 | 773 | 115 | 800 | 164 | 70 | - |
| 21 Leather & Leather Goods | 413 | 80 | 566 | 525 | 51 | 1,361 | 270 | 28 | 336 |
| 37 Textiles | 471 | 162 | 1,285 | 446 | 75 | 92 | 178 | 26 | 101 |
| 07 Boots & Shoes | 170 | 186 | 500 | 301 | 46 | 974 | 239 | 30 | 500 |
| 15 Dry Goods, Clothing | 761 | 119 | 3,777 | 607 | 136 | 331 | 281 | 18 | 600 |
| V AUXILIARIES* | 298 | 120 | 1,186 | 292 | 86 | 1,506 | 223 | 58 | 506 |
| 8a Masonry Materials (except wood) | 225 | 180 | 200 | 162 | 95 | 660 | 196 | 30 | 604 |
| 30 Petroleum, Crude & Refined | 271 | 78 | 1,234 | 400 | 52 | 1,842 | 157 | 18 | 2,766 |
| 28 Paints, Varnishes & Gums | 606 | 154 | 1,722 | 913 | 70 | 2,201 | 286 | 34 | - |
| 11 Chemicals | 298 | 132 | 1,146 | 182 | 33 | 739 | 148 | 15 | 10 |
| 40 Miscellaneous Commodities | 430 | 124 | 1,004 | 336 | 97 | 1,149 | 230 | 73 | 325 |
| VI ACCESSORIES* | 337 | 142 | 1,230 | 272 | 116 | 513 | 197 | 20 | 105 |
| 19 Iron & Steel, Structural | 265 | 211 | 1,392 | 146 | 65 | 590 | 159 | 41 | 72 |
| 20 Iron & Steel Articles | 219 | 92 | 1,161 | 151 | 49 | 598 | 143 | 18 | 315 |
| 24 Metals, Non-ferrous | 500 | 111 | 1,910 | 425 | 111 | 1,088 | 296 | 23 | 50 |
| 33 Rubber, Rubber Articles, Tires | 679 | 384 | 2,268 | 572 | 248 | 1,902 | 168 | 27 | 188 |
| 23 Machinery, Vehicles, etc. | 596 | 182 | 1,002 | 374 | 129 | 2,983 | 204 | 13 | 257 |
| 32 Plumbing & Heating Supplies | 702 | 232 | 1,318 | 502 | 134 | 4,041 | 226 | 53 | - |
| 01 Automotive Vehicles & Parts | 489 | 105 | 600 | 474 | 140 | 313 | 293 | 21 | 400 |
| 05 Boats, Marine Equipment | 2,746 | 80 | 995 | 252 | 80 | 1,594 | 323 | 4 | - |
| 06 Books & Periodicals | 987 | 211 | 811 | 671 | 180 | 1,328 | 140 | - | - |
| 14 Department Store Merchandise | 847 | 215 | 2,054 | 382 | 122 | 2,910 | 301 | 8 | - |
| 38 Tobacco, Tobacco Products | 687 | 426 | 418 | 401 | 113 | 787 | 308 | 18 | - |
| 25 Musical Instruments & Supplies | 96 | 274 | - | 338 | 170 | - | 261 | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.

# As reported by respondents to Shippers' Inquiry.



SECTION 7. CARRIER DISTRIBUTION

Analysis 7.5 Relation of Rail Freight Traffic to Area and Population

| DISTRICT | AGGREGATE UNITS SQUARE MILES (000) | AGGREGATE UNITS ROUTE MILES (000) | AGGREGATE UNITS POPULATION 1930 (000) | AGGREGATE UNITS CARS* (000) | PERCENTAGE DISTRIBUTION SQUARE MILES | PERCENTAGE DISTRIBUTION ROUTE MILES | PERCENTAGE DISTRIBUTION POPULATION 1930 | PERCENTAGE DISTRIBUTION CARS* | UNITS PER SQ.MILE ROUTE MILES | UNITS PER SQ.MILE POPULATION | CARS* | CARS PER 1000 POPULATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL DISTRICTS | | | | | | | | | | | | |
| United States | 2,974 | 243 | 123 | 56 | 100% | 100% | 100% | 100% | 82 | 41 | 19 | 453 |
| Eastern | 364 | 67 | 61 | 29 | 12 | 28 | 50 | 52 | 186 | 169 | 79 | 467 |
| Southern | 437 | 43 | 25 | 10 | 15 | 17 | 20 | 18 | 97 | 57 | 23 | 403 |
| Western | 2,173 | 133 | 37 | 17 | 73 | 55 | 30 | 30 | 61 | 17 | 8 | 462 |
| New England | 62 | 8 | 8 | 3 | 2 | 3 | 7 | 5 | 123 | 132 | 47 | 357 |
| Trunk Line | 112 | 21 | 29 | 13 | 4 | 9 | 23 | 23 | 193 | 256 | 114 | 447 |
| Central | 190 | 38 | 25 | 13 | 6 | 16 | 20 | 24 | 202 | 129 | 68 | 528 |
| Pocahontas | 64 | 8 | 4 | 3 | 2 | 3 | 3 | 6 | 121 | 65 | 54 | 835 |
| Southeastern | 373 | 35 | 21 | 7 | 13 | 14 | 17 | 12 | 94 | 56 | 18 | 317 |
| Western Trunk Line | 566 | 59 | 15 | 9 | 19 | 24 | 12 | 15 | 105 | 26 | 15 | 585 |
| Southwestern | 552 | 36 | 11 | 4 | 19 | 15 | 9 | 8 | 65 | 21 | 8 | 395 |
| Pacific Northwest | 490 | 20 | 4 | 2 | 16 | 8 | 3 | 3 | 41 | 74 | 3 | 444 |
| Pacific Southwest | 565 | 18 | 7 | 2 | 19 | 8 | 6 | 4 | 32 | 12 | 4 | 318 |
| METROPOLITAN DISTRICTS | | | | | | | | | | | | |
| United States | - | - | 37 | 22 | - | - | - | - | - | - | - | 589 |
| Eastern | - | - | 26 | 14 | - | - | - | - | - | - | - | 521 |
| Southern | - | - | 3 | 2 | - | - | - | - | - | - | - | 949 |
| Western | - | - | 8 | 6 | - | - | - | - | - | - | - | 695 |
| New England | - | - | 3 | 1 | - | - | - | - | - | - | - | 512 |
| Trunk Line | - | - | 14 | 6 | - | - | - | - | - | - | - | 413 |
| Central | - | - | 9 | 6 | - | - | - | - | - | - | - | 684 |
| Pocahontas | - | - | # | 1 | - | - | - | - | - | - | - | 2,198 |
| Southeastern | - | - | 2 | 2 | - | - | - | - | - | - | - | 776 |
| Western Trunk Line | - | - | 3 | 3 | - | - | - | - | - | - | - | 1,116 |
| Southwestern | - | - | 1 | 1 | - | - | - | - | - | - | - | 711 |
| Pacific Northwest | - | - | 1 | # | - | - | - | - | - | - | - | 464 |
| Pacific Southwest | - | - | 3 | 1 | - | - | - | - | - | - | - | 264 |
| MAJOR DISTRICTS | | | | | | | | | | | | |
| United States | - | - | 18 | 16 | - | - | - | - | - | - | - | 881 |
| Eastern | - | - | 9 | 8 | - | - | - | - | - | - | - | 838 |
| Southern | - | - | 3 | 3 | - | - | - | - | - | - | - | 980 |
| Western | - | - | 5 | 5 | - | - | - | - | - | - | - | 896 |
| New England | - | - | 2 | 1 | - | - | - | - | - | - | - | 532 |
| Trunk Line | - | - | 4 | 3 | - | - | - | - | - | - | - | 900 |
| Central | - | - | 4 | 4 | - | - | - | - | - | - | - | 897 |
| Pocahontas | - | - | 1 | 1 | - | - | - | - | - | - | - | 1,322 |
| Southeastern | - | - | 2 | 2 | - | - | - | - | - | - | - | 869 |
| Western Trunk Line | - | - | 2 | 2 | - | - | - | - | - | - | - | 1,002 |
| Southwestern | - | - | 2 | 1 | - | - | - | - | - | - | - | 846 |
| Pacific Northwest | - | - | 1 | # | - | - | - | - | - | - | - | 840 |
| Pacific Southwest | - | - | 1 | 1 | - | - | - | - | - | - | - | 714 |
| MINOR DISTRICTS | | | | | | | | | | | | |
| United States | - | - | 68 | 18 | - | - | - | - | - | - | - | 266 |
| Eastern | - | - | 26 | 7 | - | - | - | - | - | - | - | 279 |
| Southern | - | - | 19 | 4 | - | - | - | - | - | - | - | 232 |
| Western | - | - | 23 | 6 | - | - | - | - | - | - | - | 280 |
| New England | - | - | 4 | 1 | - | - | - | - | - | - | - | 195 |
| Trunk Line | - | - | 11 | 4 | - | - | - | - | - | - | - | 331 |
| Central | - | - | 11 | 3 | - | - | - | - | - | - | - | 260 |
| Pocahontas | - | - | 3 | 2 | - | - | - | - | - | - | - | 570 |
| Southeastern | - | - | 16 | 3 | - | - | - | - | - | - | - | 167 |
| Western Trunk Line | - | - | 9 | 3 | - | - | - | - | - | - | - | 301 |
| Southwestern | - | - | 8 | 2 | - | - | - | - | - | - | - | 245 |
| Pacific Northwest | - | - | 2 | 1 | - | - | - | - | - | - | - | 328 |
| Pacific Southwest | - | - | 4 | 1 | - | - | - | - | - | - | - | 278 |

* Cars Originated and Terminated.

# Less than 500.

SECTION 7. CARRIER DISTRIBUTION

Analysis 7.6 Production and Distribution of Crude Petroleum and Petroleum Products - 1932

| YEAR | TONS PRODUCED (000) | TONS ORIGINATED BY CARRIERS | | | |
|---|---|---|---|---|---|
| | | RAILWAYS (000) | PIPE LINES (TRUNK) (000) | WATERWAYS COASTWISE AND INLAND (000) | WATERWAYS INTER-COASTAL (000) |
| CRUDE PETROLEUM | | | | | |
| 1920 | 68,831 | 6,435 | 39,457 | # | # |
| 1921 | 73,377 | 5,038 | 38,832 | # | # |
| 1922 | 86,640 | 5,937 | 48,123 | # | # |
| 1923 | 113,816 | 8,403 | 48,651 | # | # |
| 1924 | 110,946 | 8,412 | 55,987 | # | # |
| 1925 | 118,686 | 11,245 | 61,420 | # | 1,789 |
| 1926 | 119,794 | 10,744 | 61,744 | 28,509 | 1,827 |
| 1927 | 140,036 | 10,531 | 73,112 | 27,664 | 1,553 |
| 1928 | 140,089 | 7,632 | 77,823 | 22,952 | 307 |
| 1929 | 156,538 | 6,630 | 85,446 | 36,816 | 151 |
| 1930 | 139,551 | 6,598 | 86,615 | 29,307 | 20 |
| 1931 | 132,258 | 7,448 | 83,336 | 33,950 | # |
| 1932 | 122,014 | 2,803 | 79,376 | 28,647 | 32 |
| 1933 | 139,685 | 4,702 | 83,548 | 36,097 | 91 |
| PETROLEUM PRODUCTS | | | | | |
| 1920 | 36,984 | 29,616 | - | # | # |
| 1921 | 38,430 | 27,213 | - | # | # |
| 1922 | 66,870 | 30,870 | - | # | # |
| 1923 | 76,385 | 36,641 | - | # | # |
| 1924 | 86,377 | 41,298 | - | # | # |
| 1925 | 99,947 | 46,273 | - | # | 2,118 |
| 1926 | 105,519 | 48,938 | - | 59,706 | 2,891 |
| 1927 | 112,743 | 51,663 | - | 60,342 | 3,341 |
| 1928 | 124,805 | 58,480 | - | 51,445 | 2,817 |
| 1929 | 133,082 | 64,340 | - | 57,453 | 3,854 |
| 1930 | 120,390 | 62,901 | - | 56,900 | 3,431 |
| 1931 | 117,197 | 55,615 | 2,533 | 58,683 | # |
| 1932 | 118,768 | 46,706 | 3,452 | 51,354 | 1,680 |
| 1933 | 124,232 | 45,464 | 4,020 | 64,826 | 2,925 |

# Not Available.

Tons Produced from statistical appendix to Minerals Year Book of Bureau of Mines; Tons Originated - Rail, from I.C.C. freight commodity statistics; Waterways, (Coastwise and Inland) from reports of Chief of Engineers U.S. Army; Intercoastal from U.S. Shipping Board Annual Report No. 317; Pipe Lines from I.C.C. annual statistics. Prior to 1931 these pipe line statistics showed only tons transported and for purposes of this statement it is assumed the ratio of tons originated to tons transported 1926 - 1931 was same as for 1931.



SECTION 7. CARRIER DISTRIBUTION

Analysis 7.7 Tonnage Moved by Water Carriers, (Domestic Only)

| COMMODITY GROUP | YEAR 1928 | YEAR 1932 |
|---|---|---|
| ALL COMMODITIES | 412,431,827 | 272,059,367 |
| I ROUGH MATERIAL | 101,648,311 | 46,987,248 |
| 10 Sand, Stone, Gravel | 68,507,010 | 33,229,888 |
| 11 Timber | 33,141,301 | 13,757,360 |
| 12 Rough Vegetables | | |
| 19 Miscellaneous | | |
| II RAW MATERIAL | 242,296,818 | 150,165,541 |
| 20 Grain | 7,389,670 | 6,351,871 |
| 21 Animal Feeds | | |
| 22 Fresh Vegetables | | |
| 23 Live Animals | | |
| 24 Dry Fuels | 102,107,505 | 73,386,435 |
| 25 Crude Liquids | 58,447,704 | 57,822,065 |
| 26 Ores | 59,645,395 | 4,886,874 |
| 27 Lumber | 11,709,611 | 5,303,247 |
| 28 Fertilizer | 2,996,933 | 2,715,049 |
| 29 Miscellaneous | | |
| III SEMIPROCESSED MATERIAL | 946,617 | 1,281,401 |
| 30 Primary Metals | | |
| 31 Fibres | 946,617 | 1,281,401 |
| 32 Hides | | |
| 33 Rubber | | |
| 34 Salt | | |
| 35 Ice | | |
| 36 Primary Paper | | |
| 37 Horticultural | | |
| 38 Scrap | | |
| 39 Miscellaneous | | |
| IV NECESSARIES | 6,045,993 | 5,311,528 |
| 40 Dry Vegetables | | |
| 41 Edible Liquids | 319,414 | 285,615 |
| 42 Edible Animal Products | | |
| 43 Manufactured Foods | 4,117,720 | 3,505,614 |
| 44 Processed Cereals | 1,608,859 | 1,520,299 |
| 45 Furnishings | | |
| 46 Textiles and Leather | | |
| 47 Clothing | | |
| 49 Miscellaneous | | |
| V AUXILIARIES | 53,457,271 | 64,755,685 |
| 50 Masonry | 2,101,362 | 1,822,731 |
| 51 Power | 14,158,878 | 20,512,739 |
| 52 Lubricants | 3,459,389 | 3,377,823 |
| 53 Kindlers | | |
| 54 Preservatives | 762,222 | 493,130 |
| 55 Chemicals, in tanks | | |
| 56 Chemicals, packaged | | |
| 57 Cleansers and Adhesives | | |
| 58 Explosives | | |
| 59 Miscellaneous | 34,975,420 | 38,549,262 |
| VI ACCESSORIES | 8,036,817 | 3,257,964 |
| 60 Ferrous Metal | 6,052,821 | 2,670,066 |
| 61 Non-ferrous Metals | 1,983,996 | 587,898 |
| 62 Rubber | | |
| 63 Tools and Appliances | | |
| 64 Machinery and Parts | | |
| 65 Vehicles and Parts | | |
| 66 Stationery, Printing | | |
| 67 Personal | | |
| 68 Amusement | | |
| 69 Miscellaneous | | |

Source - Annual Report of Chief of Engineers, U.S. Army.

Analysis 8.1 Origin and Destination of Rail Freight Commodities - 1932

| COMMODITY GROUP | RAIL CARRIER DISTRIBUTION: TONS ORIGINATED UNITED STATES (000) | PER CENT OF TONS ORIGINATED: NEW ENGLAND | CENTRAL EAST | POCAHONTAS | SOUTHERN | NORTH WEST | SOUTH WEST | TONS TERMINATED UNITED STATES (000) | PER CENT OF TONS TERMINATED: NEW ENGLAND | CENTRAL EAST | POCAHONTAS | SOUTHERN | NORTH WEST | SOUTH WEST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 630,989 | 2% | 42% | 12% | 13% | 11% | 17% | 621,812 | 5% | 47% | 6% | 11% | 16% | 15% |
| I ROUGH MATERIAL | 63,064 | 2 | 23 | 3 | 18 | 29 | 26 | 62,830 | 2 | 25 | 3 | 16 | 28 | 26 |
| Sand, Stone, Gravel | 46,641 | 2 | 29 | 3 | 19 | 21 | 26 | 45,892 | 2 | 30 | 3 | 17 | 21 | 27 |
| Timber | 10,920 | 5 | 8 | 3 | 22 | 38 | 25 | 11,587 | 6 | 12 | 3 | 17 | 37 | 26 |
| Rough Vegetables | 5,503 | - | 7 | - | - | 72 | 21 | 5,351 | - | 7 | - | - | 71 | 22 |
| Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| II RAW MATERIAL | 400,169 | 1% | 44% | 18% | 11% | 12% | 13% | 384,980 | 4% | 52% | 8% | 10% | 11% | 12% |
| Grain | 36,650 | # | 20 | 1 | 8 | 36 | 33 | 39,205 | 2 | 21 | 1 | 10 | 34 | 33 |
| Animal Foods | 8,125 | 4 | 25 | 1 | 15 | 22 | 33 | 8,782 | 11 | 27 | 2 | 14 | 20 | 26 |
| Fresh Vegetables | 7,874 | 1 | 12 | 1 | 23 | 15 | 48 | 8,420 | 8 | 50 | 1 | 9 | 14 | 17 |
| Live Animals | 10,212 | # | 17 | 1 | 5 | 47 | 31 | 10,397 | 2 | 23 | 1 | 4 | 43 | 27 |
| Dry Fuels | 282,599 | # | 52 | 24 | 13 | 6 | 5 | 262,197 | 4 | 61 | 11 | 9 | 10 | 5 |
| Crude Liquids | 10,860 | 9 | 26 | 1 | 5 | 10 | 50 | 10,454 | 11 | 27 | # | 6 | 18 | 37 |
| Ores | 23,011 | 1 | 41 | 3 | 8 | 24 | 24 | 23,412 | 2 | 56 | 4 | 6 | 7 | 26 |
| Lumber | 12,817 | 3 | 7 | 3 | 39 | 20 | 28 | 14,333 | 5 | 29 | 2 | 22 | 18 | 24 |
| Fertilizer | 8,021 | 4 | 20 | 3 | 62 | .3 | 9 | 7,840 | 5 | 21 | 3 | 60 | 3 | 8 |
| Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| III SEMIPROCESSED MATERIAL | 23,629 | 6% | 46% | 2% | 13% | 12% | 21% | 25,628 | 7% | 48% | 2% | 13% | 12% | 18% |
| Primary Metals | 3,489 | 1 | 72 | 1 | 11 | 8 | 8 | 3,603 | 5 | 70 | 1 | 10 | 7 | 8 |
| Fibres | 6,242 | 3 | 16 | 2 | 25 | 14 | 41 | 6,316 | 7 | 16 | 3 | 25 | 13 | 36 |
| Hides | 631 | 8 | 42 | 2 | 5 | 29 | 15 | 619 | 14 | 46 | 2 | 6 | 25 | 8 |
| Rubber | 378 | 10 | 87 | - | 1 | 1 | 1 | 372 | 3 | 90 | # | 2 | 4 | 1 |
| Salt | 2,576 | # | 48 | 1 | # | 5 | 46 | 3,264 | 5 | 38 | 2 | 11 | 18 | 26 |
| Ice | 1,464 | 15 | 28 | # | 6 | 31 | 20 | 1,445 | 14 | 28 | # | 6 | 32 | 20 |
| Primary Paper | 2,213 | 34 | 26 | 4 | 7 | 22 | 7 | 3,265 | 15 | 31 | 2 | 6 | 16 | 10 |
| Horticultural | 378 | 4 | 27 | 1 | 12 | 19 | 37 | 399 | 4 | 32 | 1 | 12 | 18 | 32 |
| Scrap | 6,269 | 4 | 71 | 3 | 11 | 5 | 5 | 6,346 | 3 | 75 | 3 | 10 | 5 | 5 |
| Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IV NECESSARIES | 33,854 | 4% | 30% | 1% | 10% | 28% | 26% | 35,567 | 10% | 40% | 2% | 12% | 17% | 20% |
| Dry Vegetables | 6,019 | 15 | 23 | 1 | 10 | 29 | 23 | 6,398 | 15 | 34 | 2 | 10 | 16 | 23 |
| Edible Liquids | 2,680 | 4 | 22 | # | 21 | 19 | 34 | 2,748 | 4 | 32 | 1 | 18 | 17 | 28 |
| Edible Animal Products | 6,000 | 1 | 28 | 1 | 7 | 42 | 21 | 6,106 | 14 | 49 | 2 | 10 | 15 | 10 |
| Manufactured Foods | 6,893 | 2 | 34 | 1 | 10 | 26 | 27 | 7,655 | 4 | 35 | 2 | 13 | 21 | 25 |
| Processed Cereals | 10,021 | # | 29 | 1 | 8 | 29 | 33 | 10,338 | 7 | 40 | 2 | 13 | 17 | 21 |
| Furnishings | 1,513 | 1 | 66 | 12 | 6 | 9 | 7 | 1,562 | 9 | 58 | 3 | 7 | 12 | 12 |
| Textiles and Leather | 725 | 9 | 26 | 3 | 42 | 7 | 13 | 760 | 21 | 33 | 1 | 21 | 10 | 14 |
| Clothing* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| V AUXILIARIES | 92,684 | 5% | 47% | 2% | 10% | 10% | 26% | 95,262 | 7% | 46% | 2% | 11% | 17% | 19% |
| Masonry | 20,488 | 5 | 47 | 3 | 12 | 15 | 20 | 21,248 | 8 | 44 | 3 | 11 | 17 | 18 |
| Power | 35,888 | 4 | 33 | 1 | 12 | 9 | 42 | 36,890 | 5 | 33 | 2 | 14 | 22 | 25 |
| Lubricants | 2,577 | 1 | 57 | 1 | 3 | 4 | 34 | 2,481 | 4 | 46 | 2 | 9 | 14 | 26 |
| Kindlers* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Preservatives | 3,353 | 5 | 58 | 3 | 16 | 7 | 11 | 3,437 | 7 | 53 | 3 | 13 | 15 | 10 |
| Chemicals, in tanks | 1,444 | 1 | 47 | 6 | 17 | 3 | 26 | 1,429 | 3 | 45 | 5 | 17 | 5 | 26 |
| Chemicals, packaged | 104 | 20 | 32 | 1 | 5 | 25 | 16 | 104 | 18 | 43 | # | 4 | 21 | 14 |
| Cleansers and Adhesives | 983 | 12 | 34 | 1 | 7 | 13 | 14 | 1,012 | 7 | 51 | 2 | 11 | 14 | 16 |
| Explosives | 136 | 7 | 52 | 1 | 6 | 13 | 21 | 133 | 3 | 44 | 6 | 11 | 19 | 18 |
| Miscellaneous# | 27,711 | 7 | 62 | 3 | 7 | 11 | 11 | 28,528 | 10 | 57 | 3 | 8 | 11 | 12 |
| VI ACCESSORIES | 17,589 | 3% | 78% | 2% | 5% | 6% | 7% | 17,545 | 5% | 67% | 2% | 6% | 10% | 11% |
| Ferrous Metal | 12,263 | 1 | 83 | 2 | 4 | 3 | 6 | 12,238 | 5 | 71 | 2 | 5 | 8 | 10 |
| Non-Ferrous Metals | 106 | 18 | 24 | # | # | 10 | 48 | 155 | 12 | 39 | # | # | 23 | 25 |
| Rubber | 222 | 5 | 83 | # | 1 | 6 | 5 | 215 | 6 | 47 | 2 | 9 | 17 | 20 |
| Tools and Appliances | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Machinery and Parts | 1,254 | 9 | 57 | 2 | 6 | 17 | 10 | 1,266 | 7 | 51 | 2 | 10 | 15 | 14 |
| Vehicles and Parts | 2,365 | # | 80 | 1 | 4 | 8 | 7 | 2,301 | 6 | 56 | 2 | 9 | 12 | 15 |
| Stationery, Printing | 1,227 | 24 | 52 | 5 | 4 | 15 | 1 | 1,219 | 10 | 67 | 2 | 4 | 13 | 4 |
| Personal | 152 | # | 19 | 25 | 52 | 2 | 3 | 151 | 1 | 44 | 5 | 16 | 7 | 28 |
| Amusement* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

* Included in No. 59. # Includes all Miscellaneous Manufactures - I.C.C. Group 701 # Less than .05%





Analysis 8.2 Production Areas of Crude Petroleum - 1932

| DISTRICT / STATE | PRODUCTION: AGGREGATE BARRELS (000) | PER CENT OF UNITED STATES | PRODUCING WELLS: NUMBER | DAILY PRODUCTION PER WELL * | NEW WELLS: NUMBER | ESTIMATED DAILY PRODUCTION * |
|---|---|---|---|---|---|---|
| UNITED STATES | 785,159 | 100% | 321,500 | 7 | 10,444 | 1,540 |
| MID-CONTINENT | 493,034 | 63% | 122,320 | 12 | 7,988 | 1,936 |
| Kansas | 34,848 | 4 | 18,300 | 5 | 363 | 532 |
| Oklahoma | 153,244 | 20 | 57,100 | 7 | 643 | 1,120 |
| East Texas proper | 139,084 | 18 | 9,400 | 51 | 5,641 | (1)2,500 |
| West Texas | 63,335 | 9 | 3,090 | 57 | 144 | 235 |
| Remainder of Texas except Gulf Coast | 68,209 | 9 | 28,400 | 8 | 1,037 | 198 |
| New Mexico | 12,062 | 1 | 490 | 74 | 44 | 3,898 |
| Arkansas | 12,051 | 1 | 2,880 | 11 | 4 | 178 |
| Northern Louisiana | 10,191 | 1 | 2,660 | 10 | 112 | 334 |
| Missouri | 10 | - | (2) | - | - | - |
| CALIFORNIA | 178,128 | 22% | 8,900 | 55 | 184 | 852 |
| GULF COAST | 53,466 | 7% | 3,130 | 48 | 514 | 814 |
| Texas Gulf Coast | 41,850 | 5 | 2,740 | 43 | 420 | 780 |
| Louisiana Gulf Coast | 11,616 | 2 | 390 | 84 | 95 | 963 |
| APPALACHIAN | 29,667 | 4% | 151,060 | 5 | 1,463 | 16 |
| New York | 3,508 | - | 17,680 | 5 | (3) | (3) |
| Pennsylvania | 12,412 | 1 | 80,380 | 4 | (4) 908 | (4) 3 |
| West Virginia | 3,876 | 1 | 18,850 | 6 | 46 | 14 |
| Central and Eastern Ohio | 3,579 | 1 | 20,640 | 5 | 230 | 19 |
| Kentucky | 6,287 | 1 | 13,510 | 1 | 279 | 57 |
| Tennessee | 5 | - | (2) | - | - | - |
| ROCKY MOUNTAIN | 17,410 | 2% | 4,810 | 9 | 65 | 193 |
| Montana | 2,457 | - | 1,420 | 5 | 30 | 302 |
| Wyoming | 13,418 | 2 | 3,200 | 11 | 31 | 109 |
| Colorado | 1,136 | - | 190 | 16 | 4 | 29 |
| Northwest New Mexico | 393 | - | (3) | (5) | (5) | (5) |
| Utah and Alaska | 6 | - | (6) | (6) | (6) | (6) |
| LIMA - INDIANA | 8,004 | 1% | 14,900 | 2 | 162 | 462 |
| Northwestern Ohio | 1,065 | - | 13,890 | 2 | 49 | 34 |
| Northeastern Indiana | 29 | - | 365 | 2 | - | - |
| Michigan | 6,910 | 1 | 645 | 30 | 113 | 647 |
| ILLINOIS - INDIANA | 5,450 | 1% | 16,310 | 9 | 66 | 40 |
| Southwest Indiana | 777 | - | 1,140 | 2 | 34 | 47 |
| Illinois | 4,673 | 1 | 15,170 | 8 | 12 | 7 |
| OTHER | - | -% | (7) 70 | - | (8) 2 | (8) 268 |

(1) Based on short gages averaging 30 minutes.
(2) Not available separately but included under "other".
(3) Included under Pennsylvania.
(4) Includes New York.
(5) Included under New Mexico in the Mid-Continent District.
(6) The number of wells in Alaska is included under "other" but no further information is available. Utah is included under "other" in all 4 columns.
(7) Includes Alaska, Missouri and Utah.
(8) Includes Alabama, Mississippi and Utah.
* Barrels.

Analysis 8.3 Petroleum Refinery Capacity as of January 1, 1933

| LOCATION | NUMBER OF REFINERIES OPERATING | CAPACITY IN BARRELS PER DAY | NUMBER OF REFINERIES SHUT DOWN | CAPACITY IN BARRELS PER DAY | NUMBER OF REFINERIES BEING BUILT | CAPACITY IN BARRELS PER DAY | TOTAL NUMBER OF REFINERIES | CAPACITY IN BARRELS PER DAY |
|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 372 | 3,445,118 | 133 | 444,392 | 18 | 31,545 | 523 | 3,921,055 |
| California | 44 | 783,135 | 17 | 117,600 | - | - | 61 | 900,735 |
| East Coast | 23 | 563,000 | 3 | 39,000 | 1 | 15,000 | 27 | 617,000 |
| Texas-Gulf Coast | 14 | 497,500 | 4 | 18,500 | - | - | 18 | 516,000 |
| Oklahoma, Kansas, Missouri | 63 | 449,660 | 16 | 49,980 | 5 | 13,625 | 84 | 513,265 |
| Indiana, Illinois, Kentucky | 36 | 438,688 | 10 | 12,050 | - | - | 46 | 450,738 |
| Texas Inland | 89 | 271,570 | 38 | 124,215 | 6 | 2,250 | 133 | 398,035 |
| Louisiana Gulf Coast | 4 | 132,000 | 3 | 32,000 | - | - | 7 | 164,000 |
| Appalachian | 45 | 149,530 | 9 | 10,750 | - | - | 54 | 160,280 |
| Rocky Mountains | 39 | 80,485 | 29 | 23,397 | 6 | 670 | 74 | 104,552 |
| Arkansas and Louisiana Inland | 15 | 79,550 | 4 | 16,900 | - | - | 19 | 96,450 |
| TYPES OF PROCESS | | | | | | | | |
| All Types | 372 | 3,445,118 | 133 | 444,392 | 18 | 31,545 | 523 | 3,921,055 |
| Complete | 83 | 1,894,730 | 4 | 12,500 | - | - | 87 | 1,907,230 |
| Skimming | 217 | 958,963 | 111 | 381,342 | 18 | 31,545 | 346 | 1,368,850 |
| Skimming and Asphalt | 21 | 230,200 | 1 | 22,000 | - | - | 22 | 252,200 |
| Skimming and Lube | 17 | 189,000 | 4 | 4,750 | - | - | 21 | 193,750 |
| Topping | 18 | 103,150 | 4 | 14,200 | - | - | 22 | 117,350 |
| Asphalt | 9 | 47,700 | 7 | 7,800 | - | - | 16 | 55,500 |
| Skimming, Lube and Asphalt | 2 | 22,500 | 1 | - | - | - | 3 | 22,500 |
| Lube | 4 | 1,575 | 1 | 1,800 | - | - | 5 | 3,375 |
| Petrolatum | 1 | 300 | - | - | - | - | 1 | 300 |

Source:



Analysis 8.4 Location of Petroleum Refineries East of Mississippi River

| DISTRICT | OPERATING REFINERIES: NUMBER OF REFINERIES | 1932 ANNUAL CAPACITY (000) BARRELS | 1932 PRODUCTION RUNS TO STILLS (000) BARRELS | CAPACITY UTILIZED | SHUT DOWN PLANTS*: NUMBER OF REFINERIES | 1932 ANNUAL CAPACITY (000) BARRELS |
|---|---|---|---|---|---|---|
| UNITED STATES | 372 | 1,257,498 | 819,997 | 65% | 151 | 173,737 |
| EAST OF THE MISSISSIPPI RIVER | 104 | 420,204 | 303,428 | 72% | 23 | 28,035 |
| SOUTHWEST | 185 | 522,068 | 337,898 | 65% | 76 | 93,907 |
| NORTH PACIFIC AND SOUTH PACIFIC | 83 | 315,226 | 178,671 | 57% | 52 | 51,715 |
| EAST OF THE MISSISSIPPI RIVER | | | | | | |
| EAST COAST | 23 | 205,497 | 162,534 | 79% | 4 | 19,710 |
| Georgia | 1 | 1,825 | - | - | 1 | 1,460 |
| Maryland | 3 | 20,075 | - | - | - | - |
| Baltimore | 3 | 20,075 | - | - | - | - |
| Massachusetts | 2 | 17,520 | - | - | - | - |
| E. Braintree | 1 | 7,300 | - | - | - | - |
| Everett | 1 | 10,220 | - | - | - | - |
| New Jersey | 6 | 93,075 | - | - | 2 | 12,775 |
| Bayonne | 2 | 74,825 | - | - | 1 | 10,950 |
| Paulsboro | 1 | 7,300 | - | - | - | - |
| Warners | 1 | 6,500 | - | - | - | - |
| New York | 1 | 6,935 | - | - | 1 | 5,475 |
| Brooklyn and Long Island City | 1 | 6,935 | - | - | - | - |
| Staten Island | - | - | - | - | 1 | 5,475 |
| Pennsylvania | 6 | 60,773 | - | - | - | - |
| Girard Point | 1 | 10,950 | - | - | - | - |
| Marcus Hook | 4 | 31,573 | - | - | - | - |
| Philadelphia | 1 | 18,250 | - | - | - | - |
| Rhode Island | 2 | 2,373 | - | - | - | - |
| South Carolina | 1 | 2,373 | - | - | - | - |
| Virginia | 1 | 548 | - | - | - | - |
| APPALCHIAN | 45 | 54,584 | 34,336 | 63% | 9 | 3,925 |
| New York | 4 | 7,885 | - | - | - | - |
| Wellsville | 1 | 3,650 | - | - | - | - |
| Ohio | 4 | 11,162 | - | - | 2 | 913 |
| Cleveland | 2 | 7,665 | - | - | - | - |
| Heath | 1 | 3,285 | - | - | - | - |
| Pennsylvania | 31 | 25,966 | - | - | 7 | 3,012 |
| Franklin | 2 | 3,650 | - | - | - | - |
| Pittsburgh | 2 | 3,285 | - | - | 1 | 365 |
| Rouseville | 2 | 4,015 | - | - | - | - |
| West Virginia | 6 | 6,571 | - | - | - | - |
| INDIANA, ILLINOIS, KENTUCKY, ETC. | 36 | 160,123 | 106,758 | 67% | 10 | 4,400 |
| Illinois | 9 | 46,719 | - | - | 2 | 2,446 |
| Lawrenceville | 1 | 5,840 | - | - | - | - |
| Lockport | 1 | 7,300 | - | - | - | - |
| Robinson | 1 | 3,650 | - | - | - | - |
| Wood River | 2 | 24,455 | - | - | 1 | 2,008 |
| Indiana | 5 | 71,905 | - | - | 1 | 18 |
| E. Chicago | 4 | 35,770 | - | - | - | - |
| Whiting | 1 | 36,135 | - | - | - | - |
| Kentucky | 8 | 10,440 | - | - | 3 | 293 |
| Louisville | 3 | 4,015 | - | - | - | - |
| Michigan | 5 | 6,571 | - | - | 4 | 1,643 |
| Ohio | 8 | 24,467 | - | - | - | - |
| Hooven | 1 | 4,015 | - | - | - | - |
| Toledo | 4 | 16,973 | - | - | - | - |
| Tennessee | 1 | 21 | - | - | - | - |

* Includes plants under construction and reconstruction.

Analysis 8.5 Location of Refineries in Southwestern Districts

| DISTRICT | OPERATING REFINERIES: NUMBER OF REFINERIES | 1932 ANNUAL CAPACITY (000) BARRELS | 1932 PRODUCTION RUNS TO STILLS (000) BARRELS | CAPACITY UTILIZED | SHUT DOWN PLANTS*: NUMBER OF REFINERIES | 1932 ANNUAL CAPACITY (000) BARRELS |
|---|---|---|---|---|---|---|
| OKLAHOMA, KANSAS, MISSOURI, ETC. | 63 | 164,131 | 87,170 | 53% | 21 | 23,220 |
| Iowa | - | - | - | - | 1 | 548 |
| Kansas | 16 | 54,890 | - | - | 4 | 4,791 |
| Argentine | 1 | 4,015 | - | - | - | - |
| Arkansas City | 2 | 11,680 | - | - | - | - |
| Augusta | 1 | 5,840 | - | - | - | - |
| Coffeyville | 2 | 6,388 | - | - | - | - |
| El Dorado | 2 | 10,038 | - | - | - | - |
| Kansas City | 1 | 5,475 | - | - | - | - |
| Mc Pherson | - | - | - | - | 2 | 4,015 |
| Wichita | 3 | 5,110 | - | - | - | - |
| Missouri | 2 | 8,030 | - | - | 1 | 548 |
| Sugar Creek | 1 | 6,570 | - | - | - | - |
| Nebraska | 1 | 22 | - | - | - | - |
| Oklahoma | 44 | 101,189 | - | - | 15 | 17,333 |
| Allen | 1 | 2,190 | - | - | 1 | 2,920 |
| Ardmore | 2 | 2,555 | - | - | 1 | 1,460 |
| Blackwell | 2 | 3,541 | - | - | - | - |
| Bristow | 2 | 2,373 | - | - | 1 | 1,825 |
| Cushing | 2 | 5,293 | - | - | 2 | 2,920 |
| Drumright | 1 | 6,570 | - | - | - | - |
| Enid | 2 | 7,665 | - | - | - | - |
| Muskogee | 1 | 3,285 | - | - | - | - |
| Oklahoma City | 11 | 6,333 | - | - | 2 | 1,825 |
| Okmulgee | 3 | 7,665 | - | - | - | - |
| Ponca City | 2 | 15,330 | - | - | - | - |
| West Tulsa | 2 | 19,710 | - | - | 1 | 913 |
| TEXAS INLAND | 89 | 99,132 | 49,435 | 50% | 44 | 46,165 |
| Big Spring | 2 | 4,198 | - | - | 2 | 4,928 |
| Bodie | - | - | - | - | 1 | 3,650 |
| Border | 1 | 10,950 | - | - | 1 | 2,555 |
| Colorado | 1 | 3,650 | - | - | - | - |
| Electra | 1 | 1,825 | - | - | 1 | 1,825 |
| El Paso | 3 | 7,483 | - | - | - | - |
| Ft. Worth | 6 | 9,198 | - | - | 1 | 919 |
| Henderson | 1 | 1,278 | - | - | 2 | 4,928 |
| Mc Camey | - | - | - | - | 1 | 5,475 |
| Overton | 5 | 4,106 | - | - | - | - |
| Pampa | 1 | 2,190 | - | - | 1 | 1,095 |
| San Antonio | 3 | 3,103 | - | - | - | - |
| Tyler | 1 | 5,475 | - | - | - | - |
| West Dallas | 2 | 7,300 | - | - | - | - |
| Wichita Falls | 3 | 4,198 | - | - | 4 | 6,205 |
| TEXAS GULF COAST | 14 | 181,588 | 147,143 | 81% | 4 | 6,753 |
| Baytown | 1 | 29,200 | - | - | - | - |
| Beaumont | 1 | 25,550 | - | - | - | - |
| Houston | 3 | 29,200 | - | - | 1 | 1,095 |
| Ingleside | 1 | 4,380 | - | - | - | - |
| Magnetoo | - | - | - | - | 1 | 3,650 |
| Nederland | 1 | 10,950 | - | - | - | - |
| Pasadena | 1 | 3,833 | - | - | - | - |
| Port Arthur | 2 | 67,525 | - | - | - | - |
| Port Neches | 1 | 7,300 | - | - | - | - |
| Texas City | 1 | 1,825 | - | - | 1 | 1,825 |
| LOUISIANA GULF COAST | 4 | 48,180 | 35,853 | 74% | 3 | 11,680 |
| Alabama | - | - | - | - | 1 | 2,190 |
| Louisiana | 4 | 48,180 | - | - | 2 | 9,490 |
| Baton Rouge | 1 | 32,850 | - | - | - | - |
| Destrehan | 1 | 7,300 | - | - | - | - |
| Moreaux | - | - | - | - | 1 | 8,030 |
| Noreo | 1 | 5,840 | - | - | - | - |
| ARKANSAS AND LOUISIANA INLAND | 15 | 29,037 | 18,297 | 63% | 4 | 6,169 |
| Arkansas | 8 | 12,440 | - | - | 1 | 1,205 |
| El Dorado | 4 | 10,950 | - | - | - | - |
| Louisiana | 7 | 13,889 | - | - | 3 | 4,964 |
| Cedar Grove | 1 | 274 | - | - | 1 | 3,650 |
| Gas Center | 1 | 5,475 | - | - | - | - |
| Shreveport | 3 | 6,205 | - | - | - | - |

* Includes plants under construction and reconstruction.



Analysis 8.6 Location of Refineries in Pacific Districts

| DISTRICT | OPERATING REFINERIES: NUMBER OF REFINERIES | 1932 ANNUAL CAPACITY (000) BARRELS | 1932 PRODUCTION RUNS TO STILLS (000) BARRELS | CAPACITY UTILIZED | SHUT DOWN PLANTS*: NUMBER OF REFINERIES | 1932 ANNUAL CAPACITY (000) BARRELS |
|---|---|---|---|---|---|---|
| ROCKY MOUNTAIN | 39 | 29,380 | 13,934 | 47% | 35 | 8,738 |
| Colorado | 5 | 2,092 | - | - | 5 | 544 |
| Montana | 12 | 6,333 | - | - | 12 | 5,094 |
| New Mexico | 8 | 2,173 | - | - | 2 | 109 |
| South Dakota | - | - | - | - | 1 | 15 |
| Utah | 2 | 2,555 | - | - | 3 | 493 |
| Wyoming | 12 | 16,277 | - | - | 12 | 2,533 |
| Casper | 3 | 9,344 | - | - | 1 | 37 |
| CALIFORNIA | 44 | 285,846 | 164,737 | 58% | 17 | 42,927 |
| California | 44 | 285,846 | - | - | 17 | 42,927 |
| Associated | 1 | 18,250 | - | - | - | - |
| Avila | - | - | - | - | 1 | 3,650 |
| Bakersfield | 2 | 10,038 | - | - | 1 | 730 |
| El Segundo | 1 | 36,500 | - | - | - | - |
| Hynes | 1 | 2,373 | - | - | 2 | 22,265 |
| Lebec | 1 | 4,380 | - | - | - | - |
| Long Beach | 5 | 12,593 | - | - | 1 | 365 |
| Los Angeles | 5 | 38,213 | - | - | 3 | 4,563 |
| Martinez | 1 | 13,323 | - | - | - | - |
| Oleum | 1 | 10,950 | - | - | - | - |
| Richmond | 1 | 36,500 | - | - | - | - |
| Signal Hill | 2 | 4,380 | - | - | - | - |
| Torrance | 1 | 12,775 | - | - | - | - |
| Vernon | - | - | - | - | 1 | 3,650 |
| Vinvale | - | - | - | - | 1 | 3,650 |
| Watson | 2 | 24,820 | - | - | - | - |
| Wilmington | 3 | 45,625 | - | - | - | - |

* Includes plants under construction and reconstruction.

SECTION 9. TERMINAL DISTRICT MARKETS

Analysis 9.1 Distribution of Railway Commodities Terminated Among Classes of Terminal Districts-1932*

| COMMODITY GROUP | TOTAL UNITED STATES (000) | AGGREGATE CARS TERMINATED BY CLASSES OF TERMINAL DISTRICTS: METROPOLITAN DISTRICTS (000) | MAJOR DISTRICTS (000) | MINOR DISTRICTS (000) | PERCENTAGE OF ALL COMMODITIES UNITED STATES | PERCENTAGE OF TOTAL CARS OF EACH COMMODITY TERMINATED IN UNITED STATES: METROPOLITAN DISTRICTS | MAJOR DISTRICTS | MINOR DISTRICTS |
|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 18,285 | 8,390 | 4,821 | 5,074 | 100% | 46% | 26% | 28% |
| I ROUGH MATERIAL | 837 | 178 | 147 | 511 | 5 | 21 | 18 | 61 |
| Sand, Stone and Gravel | 837 | 178 | 147 | 511 | 5 | 21 | 18 | 61 |
| II RAW MATERIAL | 9,585 | 4,745 | 2,618 | 2,223 | 52% | 49% | 27% | 23% |
| Bulk Grain and Beets | 990 | 454 | 280 | 256 | 5 | 46 | 28 | 26 |
| Perishables | 881 | 669 | 139 | 73 | 5 | 76 | 16 | 8 |
| Live Animals | 982 | 639 | 166 | 176 | 5 | 65 | 17 | 18 |
| Coal and Coke | 5,165 | 2,515 | 1,447 | 1,203 | 28 | 49 | 28 | 23 |
| Ore | 456 | 144 | 217 | 95 | 2 | 32 | 48 | 21 |
| Sulphur & Sulphuric Acid | 106 | 20 | 46 | 40 | # | 19 | 43 | 38 |
| Forest Products | 1,005 | 302 | 323 | 380 | 6 | 30 | 32 | 38 |
| III SEMIPROCESSED MATERIAL | 716 | 357 | 209 | 150 | 4% | 50% | 29% | 21% |
| Cotton, Hay and Tobacco | 404 | 159 | 137 | 108 | 2 | 39 | 34 | 27 |
| Paper and Products | 312 | 197 | 72 | 43 | 2 | 63 | 23 | 14 |
| IV NECESSARIES | 2,373 | 1,162 | 559 | 652 | 13% | 49% | 24% | 27% |
| Cereals | 744 | 283 | 198 | 264 | 4 | 38 | 27 | 35 |
| Miscellaneous Farm Products | 451 | 174 | 85 | 192 | 2 | 39 | 19 | 43 |
| Edible Animal Products | 453 | 337 | 87 | 28 | 2 | 74 | 19 | 6 |
| Oils - Vegetable & Animal | 184 | 82 | 50 | 51 | 1 | 45 | 27 | 28 |
| Manufactured Food | 490 | 263 | 127 | 101 | 3 | 54 | 26 | 20 |
| Textiles and Leather | 50 | 22 | 13 | 15 | # | 44 | 26 | 30 |
| V AUXILIARIES | 3,716 | 1,385 | 1,018 | 1,313 | 20% | 37% | 27% | 35% |
| Petroleum and Products | 1,816 | 526 | 538 | 752 | 10 | 29 | 30 | 41 |
| Building Materials | 478 | 156 | 109 | 214 | 3 | 33 | 23 | 45 |
| Chemicals | 43 | 21 | 14 | 9 | # | 48 | 31 | 21 |
| Miscellaneous | 1,378 | 682 | 357 | 338 | 8 | 50 | 26 | 25 |
| VI ACCESSORIES | 1,058 | 564 | 269 | 225 | 6% | 53% | 25% | 21% |
| Iron and Steel | 576 | 277 | 173 | 126 | 3 | 48 | 30 | 22 |
| Other Metals | 26 | 14 | 7 | 5 | # | 53 | 28 | 20 |
| Appliances | 348 | 222 | 65 | 62 | 2 | 64 | 19 | 18 |
| Glass and Tile | 108 | 52 | 24 | 32 | # | 48 | 23 | 30 |

* Carload only.
\# Less than ½ percent.



SECTION 9. TERMINAL DISTRICT MARKETS

Analysis 9.2 Distribution by Rate Territory of Railway Commodities Among Metropolitan and Major Terminal Districts - Aggregate Cars Terminated - 1932

| COMMODITY GROUP | TERMINAL DISTRICT: NEW ENGLAND (000) | TRUNK LINE (000) | CENTRAL (000) | POCAHONTAS (000) | SOUTHEASTERN (000) | WESTERN TRUNK LINE (000) | SOUTHWESTERN (000) | PACIFIC NORTHWEST (000) | PACIFIC SOUTHWEST (000) |
|---|---|---|---|---|---|---|---|---|---|
| METROPOLITAN TERMINAL DISTRICTS* | | | | | | | | | |
| ALL COMMODITIES | 421 | 2,444 | 2,624 | 384 | 566 | 1,188 | 297 | 169 | 295 |
| I ROUGH MATERIAL* | 5 | 34 | 57 | 3 | 22 | 23 | 15 | 3 | 16 |
| Sand, Stone & Gravel | 5 | 34 | 57 | 3 | 22 | 23 | 15 | 3 | 16 |
| II RAW MATERIAL* | 160 | 1,322 | 1,618 | 314 | 244 | 772 | 86 | 118 | 112 |
| Bulk Grain & Beets | 3 | 40 | 136 | 2 | 19 | 197 | 23 | 27 | 7 |
| Perishables | 65 | 257 | 169 | 4 | 34 | 56 | 23 | 26 | 36 |
| Live Animals | 20 | 128 | 215 | 2 | 12 | 200 | 19 | 11 | 33 |
| Coal & Coke | 59 | 789 | 999 | 297 | 107 | 234 | 4 | 12 | 14 |
| Ores | 2 | 49 | 21 | # | 10 | 48 | 3 | # | 10 |
| Sulphur & Sulphuric Acid | 1 | 3 | 5 | # | 7 | 2 | 1 | - | 1 |
| Forest Products | 10 | 55 | 73 | 8 | 56 | 34 | 13 | 42 | 12 |
| III SEMIPROCESSED MATERIAL* | 24 | 88 | 67 | 22 | 56 | 42 | 45 | 5 | 7 |
| Cotton, Hay & Tobacco | 6 | 16 | 9 | 19 | 43 | 20 | 40 | 4 | 2 |
| Paper & Products | 18 | 72 | 58 | 3 | 13 | 23 | 5 | 1 | 5 |
| IV NECESSARIES* | 95 | 369 | 279 | 21 | 122 | 115 | 66 | 21 | 74 |
| Cereals | 19 | 83 | 68 | 5 | 37 | 30 | 13 | 14 | 13 |
| Miscellaneous Farm Products | 6 | 44 | 49 | 6 | 20 | 17 | 9 | 2 | 22 |
| Edible Animal Products | 50 | 154 | 72 | 5 | 22 | 17 | 7 | 2 | 8 |
| Oils-Vegetable & Animal | 3 | 11 | 13 | 2 | 22 | 6 | 22 | # | 4 |
| Manufactured Food | 14 | 72 | 71 | 3 | 18 | 41 | 13 | 3 | 26 |
| Textiles & Leather | 4 | 5 | 6 | 1 | 2 | 3 | 1 | # | # |
| V AUXILIARIES* | 103 | 406 | 433 | 17 | 92 | 191 | 68 | 15 | 61 |
| Petroleum & Products | 28 | 100 | 183 | 3 | 44 | 97 | 42 | 5 | 24 |
| Building Materials | 14 | 62 | 35 | 2 | 8 | 15 | 5 | 5 | 9 |
| Chemicals | 1 | 7 | 6 | # | 3 | 3 | 1 | # | 1 |
| Miscellaneous | 60 | 237 | 209 | 11 | 37 | 76 | 20 | 5 | 27 |
| VI ACCESSORIES* | 35 | 225 | 170 | 8 | 31 | 46 | 18 | 7 | 24 |
| Iron & Steel | 15 | 106 | 112 | 3 | 14 | 16 | 5 | 1 | 5 |
| Other Metals | 1 | 3 | 4 | # | # | 2 | 1 | 1 | 1 |
| Appliances | 15 | 90 | 41 | 4 | 15 | 23 | 11 | 5 | 17 |
| Glass & Tile | 4 | 25 | 12 | 1 | 2 | 5 | 1 | # | 2 |
| MAJOR TERMINAL DISTRICTS | | | | | | | | | |
| ALL COMMODITIES | 281 | 1,075 | 1,204 | 264 | 537 | 732 | 424 | 136 | 168 |
| I ROUGH MATERIAL* | 1 | 22 | 44 | 9 | 17 | 21 | 21 | 3 | 8 |
| Sand, Stone & Gravel | 1 | 22 | 44 | 9 | 17 | 21 | 21 | 3 | 8 |
| II RAW MATERIAL* | 110 | 659 | 722 | 131 | 215 | 462 | 134 | 87 | 98 |
| Bulk Grain & Beets | 7 | 16 | 51 | 5 | 14 | 115 | 45 | 18 | 10 |
| Perishables | 9 | 25 | 23 | 11 | 15 | 25 | 17 | 6 | 7 |
| Live Animals | 6 | 13 | 15 | 3 | 2 | 112 | 6 | 3 | 7 |
| Coal & Coke | 62 | 533 | 490 | 83 | 84 | 146 | 13 | 20 | 15 |
| Ores | 2 | 30 | 89 | 11 | 6 | 28 | 3 | 5 | 43 |
| Sulphur & Sulphuric Acid | 1 | 2 | 3 | 2 | 21 | 1 | 16 | # | 1 |
| Forest Products | 24 | 40 | 52 | 16 | 72 | 35 | 34 | 35 | 15 |
| III SEMIPROCESSED MATERIAL* | 13 | 20 | 29 | 9 | 56 | 13 | 63 | 2 | 3 |
| Cotton, Hay & Tobacco | 4 | 5 | 7 | 5 | 50 | 6 | 58 | 1 | 1 |
| Paper & Products | 9 | 15 | 23 | 4 | 6 | 7 | 5 | 1 | 2 |
| IV NECESSARIES* | 47 | 93 | 78 | 35 | 120 | 73 | 79 | 13 | 22 |
| Cereals | 20 | 33 | 28 | 11 | 37 | 25 | 34 | 4 | 6 |
| Miscellaneous Farm Products | 4 | 12 | 13 | 8 | 17 | 9 | 10 | 4 | 7 |
| Edible Animal Products | 12 | 22 | 12 | 8 | 18 | 8 | 6 | 1 | 1 |
| Oils-Vegetable & Animal | 1 | 3 | 3 | # | 28 | 3 | 11 | # | 1 |
| Manufactured Food | 7 | 21 | 21 | 7 | 16 | 27 | 16 | 4 | 7 |
| Textiles & Leather | 3 | 2 | 1 | 1 | 4 | # | 1 | # | # |
| V AUXILIARIES* | 92 | 190 | 258 | 59 | 106 | 143 | 110 | 28 | 32 |
| Petroleum & Products | 41 | 78 | 133 | 20 | 58 | 91 | 80 | 18 | 20 |
| Building Materials | 7 | 25 | 24 | 7 | 12 | 17 | 11 | 3 | 3 |
| Chemicals | 1 | 2 | 3 | # | 6 | 1 | # | # | # |
| Miscellaneous | 44 | 86 | 98 | 32 | 29 | 34 | 19 | 7 | 9 |
| VI ACCESSORIES* | 16 | 31 | 73 | 21 | 23 | 19 | 17 | 4 | 5 |
| Iron & Steel | 6 | 66 | 56 | 16 | 11 | 6 | 8 | # | 3 |
| Other Metals | 2 | 2 | 1 | # | # | # | 1 | # | # |
| Appliances | 7 | 17 | 11 | 3 | 9 | 8 | 6 | 2 | 2 |
| Glass & Tile | 2 | 6 | 6 | 2 | 3 | 4 | 2 | # | # |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
\# Less than 500 cars.

SECTION 9. TERMINAL DISTRICT MARKETS

Analysis 9.3 Distribution of Railway Commodities Among Minor Terminal Districts - Aggregate Cars Terminated - 1932

| COMMODITY GROUP | TERMINAL DISTRICT: NEW ENGLAND (000) | TRUNK LINE (000) | CENTRAL (000) | POCAHONTAS (000) | SOUTHEASTERN (000) | WESTERN TRUNK LINE (000) | SOUTHWESTERN (000) | PACIFIC NORTHWEST (000) | PACIFIC SOUTHWEST (000) |
|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 329 | 1,047 | 904 | 133 | 598 | 989 | 607 | 196 | 270 |
| I ROUGH MATERIAL | 8 | 59 | 105 | 13 | 75 | 113 | 105 | 15 | 18 |
| Sand, Stone & Gravel | 8 | 59 | 105 | 13 | 75 | 113 | 105 | 15 | 18 |
| II RAW MATERIAL* | 138 | 505 | 429 | 49 | 204 | 493 | 158 | 108 | 138 |
| Bulk Grain & Beets | 9 | 28 | 28 | 2 | 7 | 98 | 27 | 29 | 34 |
| Perishables | 14 | 11 | 12 | 3 | 3 | 10 | 8 | 5 | 7 |
| Live Animals | 3 | 13 | 29 | 2 | 4 | 76 | 23 | 8 | 19 |
| Coal & Coke | 83 | 367 | 301 | 26 | 100 | 251 | 35 | 22 | 17 |
| Ores | 4 | 29 | 16 | 4 | 9 | 4 | 11 | 1 | 16 |
| Sulphur & Sulphuric | 1 | 3 | 1 | 1 | 30 | 1 | 2 | # | 1 |
| Forest Products | 23 | 55 | 41 | 10 | 50 | 59 | 52 | 43 | 45 |
| III SEMIPROCESSED MATERIAL* | 17 | 27 | 14 | 4 | 35 | 13 | 28 | 8 | 4 |
| Cotton, Hay & Tobacco | 10 | 13 | 3 | 3 | 32 | 10 | 26 | 7 | 4 |
| Paper & Products | 8 | 14 | 11 | 1 | 3 | 3 | 2 | 1 | 1 |
| IV NECESSARIES* | 59 | 139 | 58 | 23 | 138 | 77 | 117 | 19 | 21 |
| Cereals | 28 | 52 | 24 | 8 | 36 | 41 | 59 | 10 | 7 |
| Miscellaneous Farm Products | 13 | 55 | 15 | 12 | 59 | 9 | 23 | 4 | 3 |
| Edible Animal Products | 5 | 11 | 3 | 1 | 3 | 3 | 2 | # | 1 |
| Oils-Vegetable & Animal | 2 | 4 | 3 | # | 19 | 6 | 16 | 1 | 1 |
| Manufactured Food | 7 | 16 | 13 | 2 | 16 | 18 | 15 | 4 | 9 |
| Textiles & Leather | 5 | 2 | 1 | # | 4 | # | 2 | # | # |
| V AUXILIARIES* | 88 | 236 | 254 | 37 | 128 | 271 | 175 | 41 | 82 |
| Petroleum & Products | 35 | 86 | 143 | 18 | 81 | 194 | 124 | 30 | 42 |
| Building Materials | 13 | 49 | 39 | 6 | 22 | 42 | 29 | 3 | 10 |
| Chemicals | 1 | 3 | 1 | 1 | 1 | 1 | # | # | 1 |
| Miscellaneous | 40 | 97 | 71 | 13 | 25 | 34 | 22 | 7 | 30 |
| VI ACCESSORIES* | 18 | 80 | 44 | 8 | 19 | 22 | 23 | 4 | 6 |
| Iron & Steel | 6 | 50 | 33 | 5 | 8 | 7 | 12 | 2 | 3 |
| Other Metals | 1 | 1 | 1 | # | # | # | # | # | 1 |
| Appliances | 7 | 19 | 5 | 2 | 7 | 9 | 9 | 2 | 2 |
| Glass & Tile | 5 | 10 | 5 | 1 | 4 | 5 | 2 | 1 | # |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Less than 500 cars.



SECTION 9. TERMINAL DISTRICT MARKETS

Analysis 9.4 Distribution of Railway Commodities New England and Trunk Line Metropolitan Districts - Aggregate Cars Terminated - 1932

| COMMODITY GROUP | TERMINAL DISTRICT: BOSTON (000) | FALL RIVER (000) | LOWELL (000) | LYNN (000) | NEW BEDFORD (000) | SPRINGFIELD (000) | WORCESTER (000) | BRIDGEPORT (000) | HARTFORD (000) | NEW HAVEN (000) | PROVIDENCE (000) | PATERSON (000) | TRENTON (000) | WILMINGTON (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 209.3 | 6.6 | 7.9 | 6.0 | 5.8 | 38.0 | 36.8 | 15.3 | 28.9 | 23.3 | 43.2 | 19.9 | 22.9 | 20.8 |
| I ROUGH MATERIAL* | 2.5 | # | - | # | - | .3 | 1.2 | .1 | .3 | .4 | .4 | # | .2 | .4 |
| Sand, Stone and Gravel | 2.5 | # | - | # | - | .3 | 1.2 | .1 | .3 | .4 | .4 | # | .2 | .4 |
| II RAW MATERIAL* | 79.5 | 1.3 | 3.9 | 1.7 | 1.7 | 15.6 | 14.6 | 6.5 | 13.0 | 8.9 | 13.1 | 11.1 | 12.6 | 11.7 |
| Bulk Grain and Beets | 1.4 | .1 | # | .1 | .1 | .1 | .4 | # | .2 | .2 | .5 | .1 | # | - |
| Perishables | 12.4 | .4 | .3 | .2 | .8 | 3.8 | 1.4 | 2.1 | 3.8 | 2.6 | 7.0 | 1.3 | .5 | .4 |
| Live Animals | 16.9 | - | .6 | - | - | 1.0 | .2 | # | .1 | .8 | .6 | .3 | .4 | 1.4 |
| Coal and Coke | 13.4 | .5 | 2.4 | .9 | .5 | 10.2 | 11.6 | 3.6 | 8.2 | 4.0 | 3.5 | 8.9 | 10.8 | 6.4 |
| Ores | 1.3 | - | - | .1 | - | - | .1 | .1 | .1 | .2 | .3 | - | .1 | 2.5 |
| Sulphur and Sulphuric Acid | .1 | - | .3 | - | - | # | .1 | - | - | - | # | - | # | # |
| Forest Products | 4.0 | .3 | .3 | .4 | .2 | .6 | .9 | .7 | .7 | 1.1 | 1.1 | .5 | .8 | 1.1 |
| III SEMIPROCESSED MATERIAL* | 11.8 | .8 | .7 | .3 | .6 | 2.3 | 1.1 | .6 | 1.5 | 1.1 | 2.8 | 1.0 | .4 | .4 |
| Cotton, Hay and Tobacco | 2.0 | .6 | .3 | # | .5 | .3 | .3 | .1 | .3 | .5 | 1.2 | .6 | .1 | - |
| Paper and Products | 9.8 | .3 | .3 | .2 | .1 | 2.0 | .9 | .5 | 1.2 | .7 | 1.6 | .4 | .3 | .4 |
| IV NECESSARIES* | 48.0 | 2.4 | 1.4 | 1.8 | 1.7 | 8.9 | 4.7 | 3.1 | 6.3 | 5.9 | 10.9 | 4.4 | 1.9 | 2.5 |
| Cereals | 7.8 | .8 | .5 | .3 | .7 | 1.8 | 1.3 | .6 | 1.7 | 1.2 | 2.7 | .7 | .4 | .4 |
| Miscellaneous Farm Products | 2.2 | .2 | .1 | # | .2 | .2 | .2 | .2 | .2 | .8 | 1.3 | # | .1 | .4 |
| Edible Animal Products | 25.4 | 1.1 | .7 | .8 | .5 | 5.6 | 2.7 | 1.9 | 3.5 | 3.1 | 4.4 | 3.1 | 1.2 | .9 |
| Oils-Vegetable and Animal | 2.3 | # | # | - | - | - | .1 | - | # | # | # | .1 | # | # |
| Manufactured Food | 7.4 | .2 | .1 | .5 | .4 | 1.2 | .3 | .4 | .8 | .7 | 1.9 | .5 | .1 | .2 |
| Textiles and Leather | 3.0 | .1 | - | .1 | - | # | # | - | # | # | .7 | - | # | .6 |
| V AUXILIARIES* | 52.5 | 1.5 | 1.7 | 1.6 | 1.1 | 8.1 | 9.6 | 3.3 | 5.8 | 5.3 | 12.3 | 2.8 | 5.7 | 4.2 |
| Petrcleum and Products | 8.7 | .6 | .9 | .6 | .3 | 5.0 | 5.7 | .4 | 1.9 | .7 | 2.8 | 1.3 | 2.8 | .8 |
| Building Materials | 6.4 | .3 | .2 | .5 | .1 | .6 | 1.7 | .5 | .8 | 1.1 | 2.0 | .4 | .6 | .6 |
| Chemicals | .4 | # | # | - | - | # | - | .1 | # | - | # | .2 | .1 | .1 |
| Miscellaneous | 37.0 | .6 | .6 | .6 | .6 | 2.4 | 2.1 | 2.2 | 3.0 | 3.5 | 7.5 | .8 | 2.2 | 2.8 |
| VI ACCESSORIES* | 14.9 | .6 | .2 | .7 | .6 | 2.9 | 5.6 | 1.7 | 2.1 | 1.7 | 3.7 | .6 | 2.2 | 1.5 |
| Iron and Steel | 5.3 | .1 | .1 | .4 | .1 | 1.3 | 4.7 | .6 | .6 | .7 | 1.5 | .2 | 1.4 | .9 |
| Other Metals | .2 | - | - | - | .4 | # | # | .3 | # | # | .1 | - | .1 | # |
| Appliances | 7.4 | .4 | .1 | .3 | .2 | 1.4 | .7 | .6 | 1.3 | .7 | 1.6 | .3 | .5 | .4 |
| Glass and Tile | 2.0 | .1 | # | - | # | .2 | .2 | .2 | .2 | .2 | .6 | .1 | .2 | .2 |

| COMMODITY GROUP | ALBANY (000) | BUFFALO (000) | NEW YORK (000) | ROCHESTER (000) | SYRACUSE (000)* | UTICA (000) | BALTIMORE (000) | ERIE (000) | PHILADELPHIA (000) | PITTSBURGH (000) | READING (000) | SCRANTON (000) | WASHINGTON (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 39.2 | 164.3 | 1,067.9 | 66.9 | 52.6 | 22.1 | 170.1 | 49.6 | 378.9 | 192.5 | 17.6 | 84.0 | 74.6 |
| I ROUGH MATERIAL* | .6 | .6 | 5.6 | 1.1 | 12.4 | .7 | 2.6 | .6 | 1.8 | 3.4 | .5 | 1.3 | 2.7 |
| Sand, Stone and Gravel | .6 | .6 | 5.6 | 1.1 | 12.4 | .7 | 2.6 | .6 | 1.8 | 3.4 | .5 | 1.3 | 2.7 |
| II RAW MATERIAL* | 17.5 | 102.9 | 554.7 | 44.4 | 19.3 | 13.6 | 86.6 | 34.8 | 202.7 | 101.9 | 7.9 | 66.8 | 33.1 |
| Bulk Grain and Beets | 1.0 | 18.9 | 7.9 | 1.2 | .8 | .3 | 4.3 | .2 | 4.1 | .4 | .5 | .2 | .2 |
| Perishables | 5.1 | 7.8 | 137.0 | 4.7 | 4.1 | 1.2 | 14.6 | .4 | 38.3 | 31.7 | .4 | 3.3 | 6.2 |
| Live Animals | .6 | 16.2 | 70.7 | 1.5 | .4 | 1.1 | 9.5 | .5 | 14.5 | 10.1 | .8 | .1 | .3 |
| Coal and Coke | 8.9 | 53.5 | 312.8 | 35.7 | 12.2 | 10.0 | 45.8 | 32.2 | 131.0 | 27.9 | 5.7 | 62.4 | 25.1 |
| Ores | .2 | 2.1 | 4.0 | - | .4 | .2 | 6.8 | .1 | 4.9 | 27.6 | # | .1 | - |
| Sulphur and Sulphuric Acid | .1 | .8 | 1.0 | .1 | # | # | .8 | # | .4 | .2 | # | - | - |
| Forest Products | 1.7 | 3.7 | 21.1 | 1.3 | 1.4 | .8 | 4.8 | 1.4 | 9.5 | 4.0 | .5 | .8 | 1.3 |
| III SEMIPROCESSED MATERIAL* | 1.2 | 3.0 | 47.5 | 1.7 | 1.2 | .8 | 3.9 | .8 | 16.2 | 6.2 | .6 | .7 | 2.9 |
| Cotton, Hay and Tobacco | # | .4 | 11.3 | - | # | .1 | .4 | - | 1.6 | .9 | .1 | # | .1 |
| Paper and Products | 1.1 | 2.6 | 36.2 | 1.7 | 1.1 | .7 | 3.5 | .8 | 14.7 | 5.2 | .4 | .6 | 2.8 |
| IV NECESSARIES* | 6.5 | 26.2 | 180.5 | 6.6 | 7.7 | 3.0 | 21.9 | 1.8 | 51.7 | 35.0 | 1.4 | 8.3 | 9.5 |
| Cereals | 2.2 | 9.6 | 38.5 | 1.6 | 1.6 | .7 | 5.2 | .8 | 10.6 | 7.7 | .1 | 1.3 | 1.6 |
| Miscellaneous Farm Products | .2 | 3.1 | 23.6 | .4 | .6 | .1 | 4.7 | .1 | 6.5 | 3.3 | - | .1 | 1.0 |
| Edible Animal Products | 2.4 | 4.3 | 87.1 | 2.5 | 3.2 | 1.2 | 6.4 | .6 | 22.3 | 10.6 | .6 | 2.6 | 4.5 |
| Oils-Vegetable and Animal | - | 2.5 | 4.7 | .1 | # | .1 | 1.0 | - | 1.5 | .4 | # | # | .1 |
| Manufactured Food | 1.5 | 5.7 | 24.4 | 2.0 | 2.1 | .8 | 4.5 | .3 | 10.4 | 12.9 | .7 | 4.2 | 2.1 |
| Textiles and Leather | .1 | 1.0 | 2.1 | - | .1 | # | .1 | - | .5 | .1 | - | - | .2 |
| V AUXILIARIES* | 9.7 | 21.0 | 168.4 | 10.1 | 8.9 | 2.8 | 33.9 | 9.4 | 77.4 | 25.3 | 5.1 | 5.8 | 15.4 |
| Petroleum and Products | 2.4 | 7.7 | 16.4 | 4.5 | 2.6 | 1.2 | 11.4 | 2.9 | 24.0 | 7.0 | 2.8 | 3.2 | 9.0 |
| Building Materials | 1.2 | 2.8 | 33.0 | 1.5 | 1.3 | .3 | 5.0 | 1.0 | 5.3 | 4.8 | .3 | .7 | 3.6 |
| Chemicals | .1 | 1.1 | 2.1 | .3 | # | .1 | 1.0 | .1 | 1.5 | .2 | # | - | # |
| Miscellaneous | 6.1 | 9.4 | 116.9 | 3.8 | 5.0 | 1.2 | 16.4 | 5.5 | 46.6 | 13.4 | 1.9 | 1.9 | 2.8 |
| VI ACCESSORIES* | 3.7 | 10.6 | 111.3 | 2.9 | 3.1 | 1.3 | 21.3 | 2.1 | 29.0 | 20.8 | 2.2 | 1.1 | 10.9 |
| Iron and Steel | 2.4 | 4.7 | 40.9 | 1.3 | 1.5 | 1.0 | 14.0 | 1.6 | 13.6 | 15.5 | 1.2 | .5 | 5.6 |
| Other Metals | # | .3 | 1.6 | .2 | - | # | .4 | .1 | .6 | .2 | # | # | .1 |
| Appliances | 1.2 | 4.0 | 54.5 | .5 | 1.3 | .3 | 5.1 | .4 | 12.4 | 4.2 | .4 | .4 | 4.2 |
| Glass and Tile | .1 | 1.7 | 14.3 | .9 | .3 | - | 1.8 | .1 | 2.4 | 1.0 | .5 | .1 | 1.0 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Less than 50 cars.

SECTION 9. TERMINAL DISTRICT MARKETS

Analysis 9.5 Distribution of Railway Commodities Among Central Metropolitan Districts
Aggregate Cars Terminated - 1932

| COMMODITY GROUPS | TERMINAL DISTRICT AKRON (000) | CANTON (000) | CINCINNATI (000) | CLEVELAND (000) | COLUMBUS (000) | DAYTON (000) | TOLEDO (000) | YOUNGSTOWN (000) | MILWAUKEE (000) |
|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 69.8 | 19.9 | 143.8 | 245.5 | 67.6 | 52.1 | 275.5 | 65.7 | 102.9 |
| I ROUGH MATERIAL | 4.1 | .2 | 7.5 | 11.6 | .5 | .3 | 2.4 | 2.1 | 2.8 |
| Sand, Stone and Gravel | 4.1 | .2 | 7.5 | 11.6 | .5 | .3 | 2.4 | 2.1 | 2.8 |
| II RAW MATERIAL* | 42.1 | 7.7 | 73.7 | 153.3 | 35.2 | 26.6 | 238.9 | 41.9 | 43.9 |
| Bulk Grain and Beets | 5.6 | .1 | 4.7 | .9 | .8 | .1 | 12.6 | .2 | 12.1 |
| Perishables | 1.5 | .8 | 12.8 | 17.5 | 4.9 | 2.7 | 3.5 | 2.5 | 8.4 |
| Live Animals | - | .4 | 11.4 | 9.7 | 4.9 | 1.1 | .7 | .5 | 12.2 |
| Coal and Coke | 27.3 | 5.7 | 35.1 | 116.7 | 20.8 | 20.6 | 219.1 | 35.1 | 5.2 |
| Ores | 1.5 | .1 | 1.6 | 3.1 | 1.9 | .1 | .7 | 2.8 | .1 |
| Sulphur and Sulphuric Acid | .2 | .2 | 1.1 | .2 | .4 | # | .1 | .2 | .2 |
| Forest Products | 5.9 | .4 | 7.1 | 5.2 | 1.5 | 2.2 | 2.1 | .7 | 5.8 |
| III SEMIPROCESSED MATERIAL* | 1.5 | .4 | 5.7 | 4.4 | 1.9 | 2.2 | 1.3 | .2 | 3.3 |
| Cotton, Hay and Tobacco | .1 | - | .5 | .4 | - | - | .2 | - | .4 |
| Paper and Products | 1.4 | .4 | 5.3 | 4.0 | 1.9 | 2.2 | 1.1 | .2 | 2.9 |
| IV NECESSARIES* | 5.2 | 1.5 | 19.0 | 22.4 | 10.5 | 4.7 | 12.8 | 4.3 | 18.8 |
| Cereals | 1.4 | .3 | 3.5 | 6.3 | 2.7 | 1.1 | 4.9 | .9 | 7.1 |
| Miscellaneous Farm Products | .4 | .2 | 5.0 | 3.5 | 1.9 | .8 | 3.6 | .1 | 4.3 |
| Edible Animal Products | 1.1 | .5 | 1.2 | 5.4 | 1.3 | .5 | 1.6 | 1.4 | 2.4 |
| Oils-Vegetable and Animal | .2 | - | 3.6 | .4 | .7 | .3 | .3 | # | .7 |
| Manufactured Food | .8 | .5 | 5.3 | 6.6 | 3.4 | 2.0 | 2.2 | 1.8 | 3.9 |
| Textiles and Leather | 1.3 | - | .4 | .3 | .5 | .1 | .1 | # | .4 |
| V AUXILIARIES* | 14.6 | 4.6 | 29.9 | 38.1 | 16.2 | 14.8 | 14.9 | 9.3 | 27.3 |
| Petroleum and Products | 5.4 | 3.3 | 10.5 | 12.3 | 8.2 | 6.3 | 6.5 | 4.3 | 13.2 |
| Building Materials | 1.0 | .1 | 4.0 | 2.9 | 1.3 | .8 | 1.1 | 1.2 | 2.0 |
| Chemicals | .1 | # | 1.5 | .6 | .1 | # | .2 | # | .6 |
| Miscellaneous | 8.1 | 1.1 | 13.9 | 22.3 | 6.6 | 7.8 | 7.1 | 3.8 | 11.4 |
| VI ACCESSORIES | 2.3 | 5.6 | 7.9 | 15.6 | 3.3 | 3.5 | 5.3 | 7.9 | 6.9 |
| Iron and Steel | 1.6 | 5.3 | 3.4 | 11.2 | 1.8 | 2.7 | 3.3 | 7.7 | 5.0 |
| Other Metals | .1 | .1 | .4 | .9 | .1 | # | .1 | - | # |
| Appliances | .4 | .2 | 3.4 | 2.4 | 1.2 | .6 | 1.7 | # | 1.3 |
| Glass and Tile | .2 | # | .7 | 1.1 | .2 | .2 | .2 | .1 | .5 |

| COMMODITY GROUPS | DETROIT (000) | EVANSVILLE (000) | FLINT (000) | FORT WAYNE (000) | SOUTH BEND (000) | GRAND RAPIDS (000) | INDIANAPOLIS (000) | CHICAGO (000) | PEORIA (000) |
|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 294.4 | 21.4 | 29.6 | 20.2 | 21.4 | 33.6 | 126.7 | 991.2 | 42.8 |
| I ROUGH MATERIAL | 7.0 | 1.1 | .1 | .2 | .3 | # | 2.0 | 14.1 | .4 |
| Sand, Stone and Gravel | 7.0 | 1.1 | .1 | .2 | .3 | # | 2.0 | 14.1 | .4 |
| II RAW MATERIAL* | 145.9 | 9.8 | 15.0 | 12.1 | 12.4 | 19.7 | 85.7 | 634.3 | 19.8 |
| Bulk Grain and Beets | 3.1 | 2.1 | - | .5 | .2 | .7 | 11.2 | 75.4 | 5.8 |
| Perishables | 20.7 | 1.5 | 1.4 | 1.6 | .8 | 3.2 | 7.2 | 76.0 | 1.7 |
| Live Animals | 12.1 | .5 | .1 | .3 | - | .3 | 5.1 | 154.7 | 1.0 |
| Coal and Coke | 99.8 | 3.8 | 12.8 | 9.1 | 10.9 | 14.1 | 57.7 | 295.2 | 10.1 |
| Ores | 2.7 | - | - | .1 | - | .1 | .4 | 5.7 | .1 |
| Sulphur and Sulphuric Acid | .2 | # | - | # | - | # | .6 | 1.6 | # |
| Forest Products | 7.3 | 1.9 | .7 | .5 | .5 | 1.4 | 3.4 | 25.7 | 1.1 |
| III SEMIPROCESSED MATERIAL* | 6.2 | 1.0 | .5 | .3 | .3 | .8 | 2.7 | 34.0 | .4 |
| Cotton, Hay and Tobacco | .8 | .6 | .1 | # | - | .1 | .2 | 6.0 | # |
| Paper and Products | 5.4 | .4 | .4 | .3 | .3 | .7 | 2.5 | 28.0 | .4 |
| IV NECESSARIES* | 32.2 | 3.5 | 1.9 | 2.4 | .8 | 4.0 | 8.1 | 119.3 | 7.9 |
| Cereals | 6.9 | 1.9 | .8 | 1.0 | .2 | 1.1 | 2.1 | 23.9 | 1.7 |
| Miscellaneous Farm Products | 3.5 | .5 | - | .4 | - | 1.2 | 1.9 | 17.7 | 4.0 |
| Edible Animal Products | 12.1 | .3 | .6 | .3 | .2 | .8 | .7 | 41.5 | .6 |
| Oils-Vegetable and Animal | .4 | # | # | # | # | - | .1 | 5.6 | .2 |
| Manufactured Food | 8.7 | .6 | .5 | .6 | .4 | .9 | 2.9 | 28.8 | 1.4 |
| Textiles and Leather | .6 | .1 | # | # | # | .1 | .4 | 1.7 | # |
| V AUXILIARIES* | 65.3 | 4.2 | 5.1 | 3.9 | 4.6 | 8.0 | 23.8 | 138.5 | 9.9 |
| Petroleum and Products | 39.0 | 2.1 | 3.2 | 2.3 | 3.4 | 4.8 | 14.3 | 40.2 | 3.3 |
| Building Materials | 3.4 | .4 | .9 | .5 | .5 | .8 | 2.3 | 10.3 | 1.9 |
| Chemicals | .7 | # | # | # | # | # | .2 | 1.6 | .2 |
| Miscellaneous | 22.2 | 1.8 | 1.0 | 1.1 | .7 | 2.3 | 7.0 | 86.4 | 4.4 |
| VI ACCESSORIES* | 37.8 | 1.7 | 7.0 | 1.3 | 3.0 | 1.1 | 4.5 | 51.1 | 4.4 |
| Iron and Steel | 21.9 | 1.2 | 5.8 | .9 | 1.3 | .9 | 2.3 | 33.4 | 2.7 |
| Other Metals | .5 | # | - | .1 | - | # | .2 | 1.8 | - |
| Appliances | 12.7 | .4 | 1.0 | .2 | 1.7 | 1.0 | 1.6 | 10.9 | 1.5 |
| Glass and Tile | 2.7 | .1 | .3 | .1 | # | .1 | .4 | 5.0 | .2 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
\# Less than 50 cars.



SECTION 9. TERMINAL DISTRICT MARKETS

Analysis 9.6 Distribution of Railway Commodities Southern Metropolitan Districts
Aggregate Cars Terminated - 1932

| COMMODITY GROUPS | TERMINAL DISTRICT NORFOLK (000) | RICHMOND (000) | LOUISVILLE (000) | CHATTANOOGA (000) | KNOXVILLE (000) | MEMPHIS (000) | NASHVILLE (000) |
|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 340.5 | 43.7 | 76.1 | 34.5 | 26.6 | 80.5 | 47.1 |
| I ROUGH MATERIAL | 2.3 | .3 | .7 | .5 | 1.6 | 4.1 | 1.1 |
| Sand, Stone and Gravel | 2.3 | .3 | .7 | .5 | 1.6 | 4.1 | 1.1 |
| II RAW MATERIAL* | 296.1 | 17.4 | 39.4 | 16.8 | 15.5 | 33.8 | 26.2 |
| Bulk Grain and Beets | 1.2 | .7 | 5.1 | 1.4 | 1.5 | 2.2 | 4.1 |
| Perishables | 1.2 | 2.7 | 4.7 | 1.3 | .9 | 3.8 | 3.1 |
| Live Animals | .4 | 1.5 | 2.1 | .3 | .3 | 2.5 | .4 |
| Coal and Coke | 286.8 | 10.3 | 22.2 | 11.0 | 10.0 | 15.1 | 14.8 |
| Ores | .2 | .3 | .2 | .9 | .2 | .3 | - |
| Sulphur and Sulphuric Acid | .2 | .1 | .1 | .2 | .3 | # | 1.3 |
| Forest Products | 6.1 | 1.8 | 5.0 | 1.6 | 2.5 | 9.8 | 2.6 |
| III SEMIPROCESSED MATERIAL* | 14.5 | 7.8 | 10.2 | 1.8 | 1.0 | 9.8 | 1.7 |
| Cotton, Hay and Tobacco | 13.7 | 5.4 | 6.5 | .8 | .6 | 8.2 | .5 |
| Paper and Products | .7 | 2.4 | 3.7 | 1.1 | .4 | 1.5 | 1.2 |
| IV NECESSARIES* | 12.9 | 8.1 | 9.5 | 7.5 | 3.7 | 19.9 | 10.7 |
| Cereals | 2.2 | 2.4 | 2.2 | 1.9 | 1.1 | 4.1 | 5.7 |
| Miscellaneous Farm Products | 4.3 | 1.5 | 2.1 | .5 | 1.0 | 2.7 | 1.6 |
| Edible Animal Products | 3.0 | 2.0 | 1.1 | 1.2 | .5 | 3.4 | .8 |
| Oils-Vegetable and Animal | 1.4 | .5 | 1.0 | 2.1 | .2 | 7.3 | .7 |
| Manufactured Food | 1.5 | 1.7 | 3.0 | 1.6 | .8 | 1.8 | 1.6 |
| Textiles and Leather | .5 | # | .1 | .2 | # | .7 | .2 |
| V AUXILIARIES* | 9.5 | 7.2 | 12.2 | 6.2 | 3.6 | 8.8 | 5.8 |
| Petroleum and Products | 2.1 | 1.2 | 4.8 | 2.0 | 2.4 | 4.2 | 3.4 |
| Building Materials | 1.0 | .9 | 1.3 | .5 | .5 | .6 | .5 |
| Chemicals | .1 | .2 | .3 | .1 | # | .1 | .1 |
| Miscellaneous | 6.3 | 4.8 | 5.8 | 3.6 | .6 | 3.9 | 1.8 |
| VI ACCESSORIES * | 5.3 | 2.9 | 4.1 | 1.8 | 1.2 | 4.1 | 1.5 |
| Iron and Steel | 2.1 | 1.0 | 1.8 | 1.3 | .6 | 1.3 | .8 |
| Other Metals | .1 | .1 | .1 | .1 | - | # | - |
| Appliances | 2.9 | 1.3 | 1.5 | .4 | .5 | 2.3 | .6 |
| Glass and Tile | .2 | .5 | .7 | # | .1 | .5 | .1 |

| COMMODITY GROUPS | ATLANTA (000) | BIRMINGHAM (000) | JACKSONVILLE (000) | MIAMI (000) | TAMPA (000) | NEW ORLEANS (000) |
|---|---|---|---|---|---|---|
| ALL COMMODITIES | 73.8 | 53.9 | 41.0 | 6.8 | 23.5 | 102.6 |
| I ROUGH MATERIAL | 2.9 | 1.0 | 3.1 | # | 3.9 | 2.6 |
| Sand, Stone and Gravel | 2.9 | 1.0 | 3.1 | # | 3.9 | 2.6 |
| II RAW MATERIAL* | 28.6 | 28.1 | 13.6 | 2.4 | 10.9 | 28.3 |
| Bulk Grain and Beets | 1.5 | 1.5 | .3 | - | .1 | 1.1 |
| Perishables | 5.1 | 4.6 | 2.5 | 1.2 | 1.4 | 5.5 |
| Live Animals | 2.5 | 1.1 | .1 | .1 | .5 | 2.3 |
| Coal and Coke | 13.9 | 12.7 | 1.6 | .3 | .1 | 5.0 |
| Ores | .7 | 6.2 | .1 | .6 | .1 | .1 |
| Sulphur and Sulphuric Acid | .8 | .6 | .4 | - | 2.8 | .1 |
| Forest Products | 4.2 | 1.5 | 8.2 | .7 | 5.3 | 14.2 |
| III SEMIPROCESSED MATERIAL* | 6.3 | 1.1 | .9 | # | .4 | 22.5 |
| Cotton, Hay and Tobacco | 3.5 | .8 | .5 | # | .4 | 21.1 |
| Paper and Products | 2.8 | .3 | .3 | - | - | 1.4 |
| IV NECESSARIES* | 14.0 | 11.3 | 10.1 | 1.5 | 4.7 | 29.0 |
| Cereals | 3.6 | 5.0 | 3.4 | # | 2.1 | 8.1 |
| Miscellaneous Farm Products | 2.0 | 1.2 | 3.4 | .1 | .4 | 5.0 |
| Edible Animal Products | 3.0 | 2.0 | 2.2 | 1.4 | 1.9 | 4.9 |
| Oils-Vegetable and Animal | 2.9 | 1.7 | .7 | - | .2 | 5.1 |
| Manufactured Food | 2.3 | 1.3 | .5 | # | .2 | 5.3 |
| Textiles and Leather | .1 | # | # | - | - | .6 |
| V AUXILIARIES* | 15.8 | 7.6 | 11.4 | 2.6 | 2.6 | 15.5 |
| Petroleum and Products | 7.2 | 4.0 | 3.6 | 1.3 | 1.7 | 10.0 |
| Building Materials | 1.5 | .7 | .7 | .5 | .2 | 1.4 |
| Chemicals | .1 | # | 1.4 | - | .1 | .4 |
| Miscellaneous | 6.9 | 2.9 | 5.7 | .8 | .5 | 4.1 |
| VI ACCESSORIES* | 6.3 | 4.7 | 1.8 | .3 | 1.0 | 4.6 |
| Iron and Steel | 1.9 | 3.9 | .5 | .2 | .1 | 1.4 |
| Other Metals | # | - | - | - | - | .2 |
| Appliances | 4.0 | .8 | 1.2 | .1 | .9 | 2.6 |
| Glass and Tile | .4 | .1 | .1 | - | - | .4 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
\# Less than 50 cars.

## SECTION 9. TERMINAL DISTRICT MARKETS

Analysis 9.7 Distribution of Railway Commodities Among Western Metropolitan Districts
Aggregate Cars Terminated - 1932

| COMMODITY GROUP | TERMINAL DISTRICT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DEN-VER (000) | DES MO-INES (000) | DU-LUTH (000) | KAN-SAS CITY (000) | MIN-NEA-POLIS (000) | OMAHA (000) | ST. PAUL (000) | ST. LOUIS (000) | DAL-LAS (000) | EL PASO (000) | FORT WORTH (000) | HOU-STON (000) | LIT-TLE ROCK (000) | OKLA-HOMA CITY (000) |
| ALL COMMODITIES | 65.0 | 46.4 | 95.4 | 258.4 | 156.8 | 123.5 | 105.5 | 270.0 | 49.1 | 15.0 | 55.3 | 91.1 | 20.3 | 26.0 |
| I ROUGH MATERIALS* | .3 | .3 | .3 | 2.2 | 1.8 | 4.5 | .5 | 10.3 | 2.3 | # | 7.6 | 2.1 | .1 | .9 |
| Sand, Stone and Gravel | .3 | .3 | .3 | 2.2 | 1.8 | 4.5 | .5 | 10.3 | 2.3 | # | 7.6 | 2.1 | .1 | .9 |
| II RAW MATERIAL* | 36.7 | 30.5 | 75.2 | 175.0 | 102.4 | 82.4 | 66.0 | 161.7 | 44.0 | 6.0 | 26.0 | 13.5 | 5.2 | 9.9 |
| Bulk Grain and Beets | 3.1 | .6 | 43.4 | 49.4 | 54.3 | 8.9 | 2.0 | 19.6 | 4.1 | .4 | 9.4 | 2.8 | 1.0 | 3.1 |
| Perishables | 4.2 | 3.0 | 1.9 | 11.2 | 7.6 | 3.9 | 3.6 | 16.8 | 5.5 | .9 | 2.9 | 3.4 | 1.9 | 3.2 |
| Live Animals | 4.9 | 6.0 | 1.0 | 66.4 | - | 44.8 | 32.8 | 36.9 | 1.1 | .8 | 12.2 | 2.1 | # | 2.4 |
| Coal and Coke | 22.3 | 7.5 | 6.1 | 41.0 | 33.0 | 22.3 | 21.0 | 65.7 | .4 | .7 | .2 | .5 | .5 | .2 |
| Ores | .2 | 12.7 | 21.8 | .4 | # | .2 | .6 | 12.1 | .3 | 2.5 | # | .2 | - | # |
| Sulphur and Sulphuric Acid | .1 | # | - | .6 | # | # | # | 1.4 | # | # | - | .6 | - | - |
| Forest Products | 2.0 | .7 | 1.0 | 5.9 | 7.5 | 2.3 | 3.0 | 9.2 | 2.5 | .7 | 1.3 | 3.9 | 1.9 | .9 |
| III SEMIPROCESSED MATERIAL* | 3.2 | 1.2 | 1.0 | 11.3 | 3.4 | 6.7 | 4.5 | 10.0 | 2.7 | 2.0 | 2.8 | 31.1 | 2.4 | 1.2 |
| Cotton, Hay and Tobacco | 1.5 | .3 | .4 | 6.0 | .7 | 4.9 | 2.2 | 3.6 | 1.2 | 1.7 | 2.2 | 30.3 | 2.0 | .7 |
| Paper and Products | 1.7 | .9 | .6 | 5.3 | 2.7 | 1.8 | 2.3 | 6.4 | 1.4 | .2 | .5 | .8 | .5 | .5 |
| IV NECESSARIES* | 6.9 | 4.4 | 10.5 | 22.6 | 17.4 | 10.3 | 8.0 | 27.5 | 10.2 | 2.9 | 11.3 | 16.7 | 7.6 | 6.9 |
| Cereals | 1.2 | 1.9 | 5.4 | 5.1 | 3.6 | 2.4 | 1.7 | 6.8 | 1.5 | .6 | 1.9 | 4.6 | 1.9 | 1.1 |
| Miscellaneous Farm Products | 1.0 | .3 | .2 | 3.0 | 2.3 | 1.1 | .6 | 6.7 | .8 | .8 | .4 | 3.0 | .3 | .5 |
| Edible Animal Products | .3 | .3 | 3.8 | 2.6 | 3.5 | 1.5 | 1.7 | 2.1 | 1.4 | .6 | .9 | 1.7 | .7 | .8 |
| Oils-Vegetable and Animal | .6 | .1 | # | 2.5 | .4 | .6 | .2 | 1.3 | 3.6 | .1 | 6.5 | 4.8 | 3.9 | 2.1 |
| Manufactured Food | 3.6 | 1.9 | 1.1 | 8.8 | 7.5 | 4.5 | 3.6 | 8.6 | 2.8 | .7 | 1.5 | 2.2 | .8 | 2.5 |
| Textiles and Leather | .2 | - | - | .7 | .2 | .1 | .1 | 2.1 | .1 | .1 | .1 | .4 | - | # |
| V AUXILIARIES* | 13.9 | 7.4 | 6.7 | 36.7 | 26.1 | 15.5 | 21.3 | 50.9 | 14.6 | 2.8 | 6.0 | 23.8 | 4.0 | 5.1 |
| Petroleum and Products | 8.9 | 4.6 | 4.3 | 20.3 | 11.4 | 8.7 | 11.4 | 21.8 | 5.1 | 1.8 | 3.7 | 19.1 | 2.7 | 2.5 |
| Building Materials | .9 | .1 | .3 | 2.7 | 2.2 | 1.5 | 1.4 | 3.3 | .6 | .1 | .7 | .7 | .4 | 1.0 |
| Chemicals | .1 | .1 | # | .8 | .3 | .2 | .2 | .8 | .2 | - | .1 | .1 | # | .1 |
| Miscellaneous | 4.1 | 2.6 | 2.0 | 13.0 | 12.2 | 5.1 | 8.3 | 24.9 | 8.7 | .9 | 1.5 | 3.8 | .9 | 1.5 |
| VI ACCESSORIES* | 4.0 | 2.6 | 1.7 | 10.6 | 5.6 | 4.2 | 5.3 | 9.7 | 5.3 | 1.3 | 1.7 | 4.0 | .9 | 2.0 |
| Iron and Steel | 1.1 | .8 | 1.3 | 2.9 | 2.4 | 1.2 | 1.4 | 4.0 | .8 | .2 | .4 | 1.3 | .3 | .9 |
| Other Metals | .1 | .1 | - | .6 | .1 | .3 | # | .3 | # | .4 | - | .1 | - | .1 |
| Appliances | 2.5 | 1.6 | .3 | 6.5 | 2.7 | 2.3 | 3.3 | 3.5 | 4.2 | .6 | 1.1 | 2.2 | .6 | .9 |
| Glass and Tile | .2 | .1 | .2 | .6 | .5 | .4 | .6 | 1.8 | .3 | .1 | .1 | .4 | - | .2 |

| COMMODITY GROUP | PORT-LAND (000) | SE-ATTLE (000) | SPO-KANE (000) | TA-COMA (000) | LONG BEACH (000) | LOS AN-GELES (000) | SALT LAKE CITY (000) | OAK-LAND (000) | SAN DIEGO (000) | SAN FRAN-CISCO (000) | WIC-HITA (000) | DAV-EN-PORT (000) | TULSA (000) | SAN AN-TONIO (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 50.0 | 49.8 | 28.7 | 40.9 | 2.0 | 94.2 | 36.9 | 54.4 | 6.4 | 101.0 | 33.4 | 33.8 | 12.7 | 28.0 |
| I ROUGH MATERIAL* | 2.2 | # | .6 | .1 | .2 | 6.6 | .7 | 3.4 | - | 5.5 | .5 | 2.3 | .6 | 1.6 |
| Sand, Stone and Gravel | 2.2 | # | .6 | .1 | .2 | 6.6 | .7 | 3.4 | - | 5.5 | .5 | 2.3 | .6 | 1.6 |
| II RAW MATERIAL* | 32.6 | 31.3 | 20.1 | 34.3 | .4 | 41.8 | 18.9 | 13.7 | 2.0 | 35.7 | 22.5 | 19.3 | 3.2 | 7.8 |
| Bulk Grain and Beets | 8.9 | 7.8 | 3.6 | 6.8 | - | 3.8 | .9 | .7 | .4 | 1.7 | 11.7 | 3.8 | .2 | 2.1 |
| Perishables | 12.2 | 11.5 | .8 | 1.8 | .2 | 14.3 | .5 | 5.1 | 1.2 | 15.1 | 2.6 | 1.6 | 1.8 | 3.0 |
| Live Animals | 4.5 | 2.6 | 1.8 | 1.8 | - | 18.8 | .7 | 1.9 | .3 | 10.8 | 5.7 | 1.0 | .4 | # |
| Coal and Coke | 1.8 | 5.3 | 3.8 | 1.6 | - | .4 | 9.3 | 1.6 | .1 | 2.5 | 1.4 | 11.0 | .2 | .8 |
| Ores | - | # | .2 | .1 | - | .2 | 7.2 | .8 | # | 1.6 | # | .2 | # | # |
| Sulphur and Sulphuric Acid | - | - | - | - | .1 | .3 | # | .2 | - | .3 | .1 | # | .3 | .1 |
| Forest Products | 5.3 | 4.0 | 9.9 | 22.3 | .1 | 4.0 | .2 | 3.5 | # | 3.9 | 1.0 | 1.7 | .3 | 1.6 |
| III SEMIPROCESSED MATERIAL* | .9 | 2.1 | .1 | 2.2 | # | 2.2 | .4 | .8 | # | 3.4 | .4 | .6 | .5 | 2.5 |
| Cotton, Hay and Tobacco | .6 | 1.5 | .1 | 2.1 | - | .1 | - | .2 | # | 1.6 | - | # | - | 1.6 |
| Paper and Products | .3 | .6 | .1 | # | # | 2.0 | .4 | .6 | # | 1.8 | .4 | .5 | .5 | 1.0 |
| IV NECESSARIES* | 9.1 | 7.8 | 2.2 | 2.4 | .2 | 19.3 | 5.4 | 21.0 | 1.2 | 26.7 | 3.6 | 3.4 | 2.8 | 7.3 |
| Cereals | 6.7 | 5.1 | .5 | 1.8 | # | 3.8 | 3.1 | 1.7 | .5 | 4.0 | .7 | 1.2 | .5 | 1.2 |
| Miscellaneous Farm Products | .5 | .4 | .5 | .1 | # | 3.7 | .3 | 8.7 | .1 | 8.9 | 1.4 | .6 | .4 | 3.0 |
| Edible Animal Products | .5 | 1.3 | .3 | .2 | .1 | 3.4 | .5 | .8 | .2 | 3.2 | .2 | .8 | .4 | .7 |
| Oils-Vegetable and Animal | # | .1 | # | .1 | .1 | 2.2 | .2 | 1.0 | # | .9 | .1 | # | .7 | .6 |
| Manufactured Food | 1.3 | .8 | .9 | .2 | .1 | 6.1 | 1.3 | 8.8 | .3 | 9.7 | 1.2 | .7 | .8 | 1.6 |
| Textiles and Leather | .1 | # | - | - | # | .1 | # | - | - | .1 | # | .1 | - | .2 |
| V AUXILIARIES* | 3.4 | 5.0 | 4.9 | 1.5 | .3 | 16.4 | 10.1 | 10.0 | 2.9 | 21.3 | 6.0 | 6.6 | 5.0 | 6.5 |
| Petroleum and Products | .6 | .7 | 3.3 | .1 | .1 | 2.3 | 8.5 | 4.9 | .6 | 7.8 | 2.2 | 3.6 | 3.6 | 3.1 |
| Building Materials | .7 | 2.3 | .5 | 1.0 | .1 | 2.8 | .6 | 2.2 | .5 | 2.6 | 1.7 | 1.3 | .5 | 1.1 |
| Chemicals | .1 | - | # | - | # | .4 | # | .1 | # | .3 | .1 | # | - | .2 |
| Miscellaneous | 2.0 | 1.9 | 1.0 | .4 | .2 | 10.9 | 1.0 | 2.8 | 1.8 | 10.5 | 2.0 | .6 | .9 | 2.2 |
| VI ACCESSORIES* | 1.7 | 3.6 | .9 | .5 | .8 | 7.9 | 1.4 | 5.5 | .3 | 8.3 | .5 | 1.7 | .5 | 2.3 |
| Iron and Steel | .1 | .2 | .2 | .1 | # | 1.2 | .4 | 1.0 | # | 2.1 | .1 | .9 | .4 | .6 |
| Other Metals | .1 | .7 | - | # | - | - | - | .5 | - | .4 | # | # | - | # |
| Appliances | 1.5 | 2.6 | .5 | .4 | .8 | 6.2 | 1.0 | 3.0 | .3 | 5.6 | .3 | .4 | .2 | 1.5 |
| Glass and Tile | # | .1 | .2 | .1 | # | .5 | - | .9 | # | .3 | - | .4 | # | .2 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
\# Less than 50 cars.



## SECTION 10. TRADE AREA MARKETS

Analysis 10.1 Freight Traffic of United States, Districts, Territories, and Multiple Markets

| DISTRICTS OR TERRITORIES | NUMBER OF COMMUNITIES ON RAILROADS | POPULATION TRADE AREAS RURAL (000) | POPULATION TRADE AREAS URBAN (000) | POPULATION TRADE AREAS TOTAL (000) | TRADE CENTERS (000) | TRADE AREAS SQUARE MILES | ON TRACK INDUSTRIES TRADE AREAS | ON TRACK INDUSTRIES TRADE CENTERS | CARS ORIGINATED TRADE AREAS (000) | CARS ORIGINATED TRADE CENTERS (000) | CARS TERMINATED TRADE AREAS (000) | CARS TERMINATED TRADE CENTERS (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 34,221 | 52,199 | 70,577 | 122,775 | 50,779 | 3,041,815 | 186,175 | 79,748 | 27,391 | 14,176 | 27,005 | 17,816 |
| EASTERN | 10,410 | 15,125 | 45,323 | 60,448 | 33,611 | 365,282 | 73,895 | 35,166 | 13,280 | 7,549 | 15,174 | 10,427 |
| SOUTHERN | 7,889 | 16,707 | 7,664 | 24,372 | 4,599 | 475,254 | 30,755 | 14,878 | 5,603 | 2,127 | 4,170 | 2,665 |
| WESTERN | 15,922 | 20,366 | 17,589 | 37,955 | 12,569 | 2,201,279 | 81,525 | 29,710 | 8,508 | 4,500 | 7,660 | 4,724 |
| NEW ENGLAND | 1,070 | 1,419 | 6,659 | 8,078 | 4,252 | 62,757 | 7,548 | 3,933 | 1,165 | 776 | 1,562 | 1,042 |
| TRUNK LINE | 4,087 | 6,451 | 22,450 | 28,901 | 17,038 | 117,266 | 25,019 | 10,286 | 5,977 | 2,978 | 6,676 | 4,338 |
| CENTRAL | 5,253 | 7,255 | 16,214 | 23,469 | 12,320 | 185,259 | 41,328 | 20,941 | 6,138 | 3,795 | 6,936 | 5,048 |
| POCAHONTAS | 1,057 | 2,869 | 1,320 | 4,190 | 81 | 84,845 | 5,021 | 2,301 | 2,128 | 475 | 1,088 | 748 |
| SOUTHEASTERN | 6,832 | 13,838 | 6,344 | 20,182 | 4,518 | 390,409 | 25,734 | 12,577 | 3,475 | 1,652 | 3,083 | 1,917 |
| WESTERN TRUNK LINE | 7,861 | 8,727 | 6,867 | 15,594 | 4,965 | 650,076 | 43,290 | 13,871 | 4,405 | 2,604 | 4,119 | 2,634 |
| SOUTHWESTERN | 4,441 | 7,607 | 4,219 | 11,826 | 2,838 | 566,536 | 18,720 | 7,211 | 2,167 | 1,056 | 1,891 | 1,063 |
| PACIFIC NORTHWEST | 1,543 | 1,853 | 1,740 | 3,593 | 1,390 | 453,062 | 9,546 | 4,306 | 791 | 381 | 655 | 427 |
| PACIFIC SOUTHWEST | 2,077 | 2,179 | 4,763 | 6,942 | 3,376 | 531,605 | 9,969 | 4,322 | 1,145 | 458 | 995 | 599 |
| BOSTON (1) | 97 | 46 | 2,146 | 2,192 | 781 | 1,321 | 1,486 | 786 | 295 | 240 | 411 | 301 |
| NEW YORK CITY (2) | 421 | 503 | 10,442 | 10,945 | 1,867 | 4,301 | 3,733 | 642 | 676 | 297 | 1,803 | 730 |
| PHILADELPHIA (3) | 286 | 335 | 2,683 | 3,018 | 1,951 | 3,298 | 2,296 | 1,171 | 434 | 298 | 669 | 465 |
| PITTSBURGH (4) | 229 | 407 | 1,470 | 1,878 | 670 | 2,311 | 1,623 | 598 | 973 | 346 | 526 | 394 |
| DETROIT (5) | 36 | 132 | 1,947 | 2,080 | 1,569 | 1,473 | 2,125 | 1,865 | 246 | 227 | 417 | 374 |
| CLEVELAND (6) | 63 | 116 | 1,278 | 1,394 | 900 | 2,069 | 1,737 | 1,340 | 331 | 196 | 526 | 371 |
| CHICAGO (7) | 272 | 197 | 4,306 | 4,504 | 3,376 | 3,022 | 5,456 | 4,548 | 1,321 | 1,195 | 1,748 | 1,403 |
| ST. LOUIS (8) | 450 | 584 | 1,251 | 1,836 | 822 | 16,100 | 3,191 | 1,255 | 625 | 278 | 625 | 389 |
| LOS ANGELES (9) | 145 | 342 | 2,018 | 2,360 | 1,238 | 5,298 | 1,626 | 871 | 141 | 86 | 177 | 148 |
| SAN FRANCISCO (10) | 157 | 208 | 1,318 | 1,526 | 634 | 6,378 | 1,906 | 761 | 288 | 86 | 263 | 92 |

(1) Boston Multiple Market includes Arlington, Boston, Brookline, Cambridge, Chelsea, Framingham, Lynn, Melrose, Newton, Norwood, Quincy, Salem, Waltham.
(2) New York City Multiple Market includes Brooklyn, Bronx, Freeport, Manhattan, Oyster Bay, Queens, Staten Island, Yonkers, Elizabeth, Hackensack, Jersey City, Newark, New Brunswick, Paterson, Stamford.
(3) Philadelphia Multiple Market includes Norristown, Philadelphia, West Philadelphia, Camden.
(4) Pittsburgh Multiple Market includes Aliquippa, Beaver Falls, Braddock, Greensburg, McKeesport, Natrona, Pittsburgh.
(5) Detroit Multiple Market includes Dearborn, Detroit, Mt. Clements, Royal Oak.
(6) Cleveland Multiple Market includes Cleveland, Euclid, Lorain, Painesville.
(7) Chicago Multiple Market includes Chicago, Evanston, Oak Park, East Chicago.
(8) St. Louis Multiple Market includes St. Louis, Webster Grove, Alton, East St. Louis.
(9) Los Angeles Multiple Market includes Long Beach, Los Angeles, Pasadena, Santa Ana.
(10) San Francisco Multiple Market includes Oakland, San Francisco, San Jose, Vallejo.

SECTION 10. TRADE AREA MARKETS

Analysis 10.2 Freight Traffic of New England Trade Areas - 1932

| NUMBER | TRADE AREA / TRADE CENTER | NUMBER OF COMMUNITIES: RAILROADS | COMMUNITIES | POPULATION: TRADE AREA RURAL (000) | TRADE AREA URBAN (000) | TRADE AREA TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES: TRADE AREA | ON TRACK INDUSTRIES: TRADE CENTER | CARS ORIGINATED: TRADE AREA (000) | CARS ORIGINATED: TRADE CENTER (000) | CARS TERMINATED: TRADE AREA (000) | CARS TERMINATED: TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MAINE** | | | | | | | | | | | | | |
| 17-5716 | Augusta | 1 | 7 | 15 | 25 | 41 | 17 | 527 | 31 | 12 | 5 | 4 | 8 | 4 |
| 16-5806 | Bangor | 3 | 86 | 115 | 75 | 191 | 29 | 11,139 | 169 | 24 | 39 | 11 | 47 | 12 |
| 14-5831 | Houlton | 4 | 68 | 62 | 34 | 96 | 7 | 7,105 | 96 | 24 | 61 | 4 | 22 | 2 |
| 17-5706 | Lewiston-Auburn | 3 | 41 | 75 | 91 | 166 | 35 | 4,482 | 156 | 4 | 26 | 1 | 31 | 1 |
| 17-5707 | Portland | 3 | 27 | 56 | 136 | 192 | 71 | 1,820 | 75 | 26 | 67 | 62 | 52 | 40 |
| 17-5831 | Rockland | 1 | 5 | 20 | 13 | 33 | 9 | 590 | 17 | 8 | 5 | 5 | 4 | 3 |
| 16-5716 | Waterville | 2 | 8 | 38 | 31 | 69 | 15 | 3,985 | 89 | 20 | 16 | 9 | 20 | 12 |
| | **NEW HAMPSHIRE** | | | | | | | | | | | | | |
| 17-5616 | Berlin | 3 | 27 | 19 | 29 | 48 | 20 | 2,560 | 80 | 13 | 6 | 1 | 8 | 2 |
| 18-5606 | Concord | 1 | 22 | 33 | 49 | 82 | 25 | 1,499 | 112 | 37 | 9 | 5 | 16 | 8 |
| 18-5616 | Dover | 1 | 12 | 13 | 19 | 32 | 14 | 323 | 30 | 16 | 2 | 2 | 6 | 4 |
| 19-5516 | Keene | 2 | 17 | 29 | 25 | 54 | 14 | 1,198 | 110 | 47 | 8 | 3 | 12 | 5 |
| 18-5617 | Laconia | 1 | 14 | 20 | 12 | 33 | 12 | 1,221 | 49 | 20 | 4 | # | 9 | 2 |
| 18-5531 | Lebanon | 2 | 13 | 13 | 19 | 31 | 7 | 820 | 49 | 15 | 11 | 1 | 13 | 1 |
| 18-5607 | Manchester | 1 | 21 | 22 | 86 | 108 | 77 | 851 | 124 | 78 | 12 | 10 | 22 | 18 |
| 19-5606 | Nashua | 1 | 7 | 10 | 38 | 48 | 31 | 403 | 85 | 55 | 10 | 8 | 10 | 9 |
| 18-5716 | Portsmouth | 1 | 15 | 12 | 24 | 36 | 14 | 355 | 30 | 16 | 5 | 4 | 6 | 3 |
| 18-5618 | Rochester | 1 | 16 | 15 | 10 | 25 | 10 | 830 | 42 | 16 | 5 | 2 | 7 | 2 |
| | **VERMONT** | | | | | | | | | | | | | |
| 17-5516 | Barre-Montpelier | 3 | 19 | 50 | 19 | 69 | 11 | 1,614 | 129 | 110 | 4 | 1 | 7 | 3 |
| 19-5531 | Bennington | 3 | 9 | 14 | 7 | 22 | 7 | 661 | 20 | 7 | 5 | 3 | 6 | 3 |
| 17-5416 | Burlington | 4 | 25 | 39 | 30 | 69 | 25 | 1,398 | 95 | 48 | 7 | 5 | 15 | 10 |
| 19-5532 | Brattleboro | 2 | 4 | 10 | 9 | 19 | 9 | 557 | 18 | 17 | 3 | 3 | 3 | 3 |
| 17-5531 | Montpelier | See Barre, Vermont | | | | | | | | | | | | |
| 18-5516 | Rutland | 3 | 25 | 37 | 26 | 62 | 17 | 1,526 | 103 | 39 | 18 | 9 | 19 | 13 |
| 17-5431 | St. Albans | 3 | 15 | 24 | 8 | 32 | 8 | 694 | 46 | 18 | 10 | 7 | 10 | 6 |
| 17-5532 | St. Johnsbury | 3 | 34 | 43 | 21 | 64 | 8 | 1,892 | 68 | 21 | 22 | 4 | 29 | 6 |
| | **MASSACHUSETTS** | | | | | | | | | | | | | |
| Boston Multiple Market | | - | 97 | 46 | 2,146 | 2,192 | 781 | 1,321 | 1,486 | 786 | 295 | 240 | 411 | 301 |
| 19-5706 | Arlington | 1 | 8 | 7 | 85 | 93 | 36 | 83 | 43 | 6 | # | # | 5 | 1 |
| 19-5701 | Boston | 3 | 10 | - | 781 | 781 | 781 | 54 | 863 | 786 | 248 | 240 | 317 | 301 |
| 19-5707 | Brookline | 2 | 2 | - | 47 | 47 | 47 | 41 | 15 | 6 | # | # | 2 | # |
| 19-5702 | Cambridge* | 1 | 1 | - | 277 | 277 | 277 | 125 | 11 | - | # | - | 1 | - |
| 19-5708 | Chelsea | 1 | 3 | - | 205 | 205 | 46 | 126 | 73 | 30 | 12 | 11 | 8 | 5 |
| 19-5716 | Framingham | 2 | 8 | 6 | 62 | 68 | 22 | 103 | 64 | 37 | 8 | 6 | 14 | 8 |
| 19-5703 | Lynn | 2 | 5 | 3 | 127 | 131 | 102 | 124 | 70 | 37 | 5 | 4 | 11 | 9 |
| 19-5717 | Melrose | 1 | 5 | 2 | 63 | 65 | 23 | 100 | 34 | 4 | 3 | # | 5 | 1 |
| 19-5709 | Newton | 1 | 4 | - | 65 | 65 | 65 | 42 | 12 | 3 | 1 | # | 3 | 1 |
| 19-5718 | Norwood | 1 | 15 | 5 | 43 | 49 | 15 | 61 | 53 | 14 | 9 | # | 14 | 2 |
| 19-5710 | Quincy | 1 | 15 | 2 | 138 | 139 | 72 | 230 | 72 | 3 | 3 | # | 8 | 2 |
| 19-5711 | Salem | 1 | 10 | 11 | 147 | 159 | 43 | 149 | 74 | 40 | 3 | 1 | 10 | 5 |
| 19-5712 | Waltham | 3 | 11 | 9 | 103 | 112 | 39 | 83 | 102 | 13 | 3 | 1 | 15 | 7 |
| 19-5713 | Brockton | 1 | 26 | 19 | 148 | 167 | 64 | 528 | 174 | 79 | 8 | 3 | 18 | 8 |
| 20-5701 | Fall River | 1 | 7 | 18 | 158 | 176 | 115 | 330 | 65 | 25 | 19 | 17 | 13 | 9 |
| 19-5607 | Fitchburg | 3 | 24 | 28 | 91 | 119 | 41 | 592 | 185 | 58 | 23 | 7 | 29 | 10 |
| 19-5517 | Greenfield | 3 | 17 | 22 | 40 | 62 | 16 | 775 | 85 | 27 | 8 | 2 | 13 | 5 |
| 19-5608 | Haverhill | 1 | 16 | 10 | 76 | 86 | 49 | 124 | 177 | 41 | 10 | 1 | 18 | 8 |
| 19-5506 | Holyoke | 4 | 14 | 10 | 105 | 115 | 57 | 624 | 188 | 109 | 28 | 10 | 25 | 16 |
| 19-5609 | Lawrence | 1 | 4 | - | 123 | 123 | 85 | 100 | 7 | - | 29 | 29 | 41 | 40 |
| 19-5601 | Lowell | 2 | 9 | 5 | 126 | 131 | 100 | 83 | 173 | 157 | 6 | 4 | 14 | 11 |
| 20-5702 | New Bedford | 1 | 34 | 23 | 169 | 192 | 113 | 781 | 130 | 51 | 8 | 5 | 21 | 10 |
| 19-5517 | North Adams | 2 | 9 | 1 | 38 | 39 | 22 | 386 | 114 | 30 | 25 | 8 | 28 | 13 |
| 19-5507 | Pittsfield | 3 | 16 | 15 | 67 | 82 | 50 | 580 | 131 | 45 | 16 | 11 | 32 | 21 |
| 20-5501 | Springfield | 4 | 21 | 40 | 279 | 319 | 150 | 754 | 262 | 191 | 43 | 34 | 75 | 65 |
| 19-5602 | Worcester | 3 | 51 | 58 | 358 | 416 | 195 | 1,158 | 409 | 163 | 57 | 41 | 87 | 55 |
| | **CONNECTICUT** | | | | | | | | | | | | | |
| 21-5503 | Bridgeport | 1 | 5 | 6 | 183 | 189 | 147 | 221 | 117 | 102 | 25 | 24 | 34 | 32 |
| 21-5518 | Danbury | 2 | 11 | 20 | 34 | 54 | 22 | 486 | 70 | 39 | 3 | 2 | 11 | 7 |
| 20-5502 | Hartford | 1 | 35 | 71 | 288 | 359 | 161 | 1,280 | 452 | 266 | 33 | 27 | 66 | 50 |
| 20-5506 | Meriden | 1 | 3 | - | 38 | 38 | 38 | 42 | 84 | 74 | 3 | 2 | 5 | 4 |
| 20-5507 | New Britain | 1 | 8 | 5 | 103 | 108 | 68 | 66 | 177 | 91 | 9 | 6 | 14 | 8 |
| 21-5504 | New Haven | 1 | 17 | 63 | 262 | 325 | 163 | 732 | 314 | 187 | 25 | 15 | 48 | 34 |
| 20-5606 | New London | 1 | 8 | 18 | 49 | 67 | 30 | 294 | 69 | 31 | 23 | 21 | 14 | 9 |
| 21-5504 | Norwalk | 1 | 8 | 8 | 42 | 50 | 36 | 572 | 43 | 28 | 2 | 1 | 6 | 4 |
| 20-5616 | Norwich | 2 | 9 | 28 | 27 | 56 | 23 | 362 | 64 | 42 | 8 | 3 | 14 | 6 |
| 20-5508 | Waterbury | 1 | 21 | 26 | 163 | 189 | 100 | 833 | 240 | 104 | 22 | 12 | 38 | 21 |
| 20-5617 | Willimantic | 2 | 8 | 13 | 12 | 25 | 12 | 404 | 45 | 33 | 1 | 1 | 4 | 3 |
| | **RHODE ISLAND** | | | | | | | | | | | | | |
| 20-5706 | Newport | 1 | 3 | 5 | 31 | 36 | 28 | 68 | 26 | 21 | 3 | # | 4 | 3 |
| 20-5607 | Pawtucket | See Providence | | | | | | | | | | | | |
| 20-5601 | Providence | 1 | 42 | 61 | 587 | 648 | 253 | 1,096 | 351 | 227 | 68 | 61 | 85 | 70 |
| 19-5610 | Woonsocket | 1 | 10 | 13 | 79 | 92 | 49 | 115 | 87 | 42 | 3 | 3 | 9 | 6 |
| TOTAL NEW ENGLAND | | - 1,070 | 1,119 | 6,699 | 8,078 | 4,252 | 62,757 | 7,548 | 3,933 | 1,165 | 776 | 1,562 | 1,042 | |

* Originated and Terminated Cars and Industries of Trade Center reported with Boston.

\# Less than 500



SECTION 10. TRADE AREA MARKETS

Analysis 10.3 Freight Traffic of New York and New Jersey Trade Areas - 1932

| NUMBER | TRADE AREA / TRADE CENTER | NUMBER OF COMMUNITIES: RAILROADS | COMMUNITIES | POPULATION: TRADE AREA RURAL (000) | TRADE AREA URBAN (000) | TRADE AREA TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES: TRADE AREA | ON TRACK INDUSTRIES: TRADE CENTER | CARS ORIGINATED: TRADE AREA (000) | CARS ORIGINATED: TRADE CENTER (000) | CARS TERMINATED: TRADE AREA (000) | CARS TERMINATED: TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **NEW YORK** | | | | | | | | | | | | | |
| 19-5401 | Albany | 3 | 54 | 109 | 161 | 270 | 127 | 2,279 | 329 | 193 | 79 | 49 | 3 | 63 |
| 19-5206 | Auburn | 2 | 26 | 36 | 47 | 83 | 37 | 969 | 151 | 66 | 21 | 10 | 25 | 15 |
| 20-5306 | Binghamton | 5 | 71 | 117 | 129 | 246 | 77 | 3,507 | 699 | 112 | 79 | 52 | 81 | 34 |
| 20-5001 | Buffalo | 8 | 133 | 204 | 837 | 1,041 | 573 | 3,330 | 1,223 | 472 | 364 | 244 | 359 | 234 |
| 20-5216 | Corning | 4 | 27 | 53 | 22 | 75 | 16 | 1,513 | 144 | 16 | 13 | 4 | 20 | 8 |
| 20-5206 | Elmira | 6 | 52 | 69 | 81 | 146 | 47 | 2,759 | 385 | 191 | 43 | 29 | 57 | 34 |
| 18-5416 | Glens Falls | 1 | 23 | 34 | 43 | 77 | 19 | 1,812 | 125 | 42 | 15 | 6 | 20 | 7 |
| 19-5416 | Gloversville* | 1 | 6 | 22 | 36 | 59 | 23 | 2,415 | 22 | - | 3 | - | 6 | - |
| 20-5116 | Hornell | 4 | 28 | 43 | 29 | 72 | 16 | 1,349 | 134 | 12 | 16 | 3 | 18 | 9 |
| 20-5217 | Ithaca | 3 | 19 | 29 | 21 | 50 | 21 | 638 | 106 | 53 | 14 | 3 | 16 | 8 |
| 21-5006 | Jamestown | 4 | 24 | 31 | 52 | 83 | 45 | 695 | 190 | 68 | 17 | 14 | 22 | 14 |
| 20-5106 | Kingston | 3 | 36 | 52 | 35 | 88 | 28 | 1,458 | 117 | 61 | 13 | 9 | 20 | 12 |
| 19-5316 | Little Falls | 1 | 4 | 10 | 19 | 30 | 11 | 557 | 50 | 22 | 5 | 3 | 7 | 5 |
| 17-5331 | Malone | 3 | 34 | 35 | 36 | 71 | 9 | 2,358 | 171 | 40 | 16 | 4 | 32 | 9 |
| 21-5116 | Middletown | 4 | 48 | 49 | 44 | 93 | 21 | 1,473 | 203 | 45 | 15 | 7 | 34 | 12 |
| 21-5106 | Newburgh | 4 | 36 | 43 | 50 | 93 | 31 | 508 | 106 | 43 | 11 | 5 | 22 | 10 |
| 17-5216 | Ogdensburg | 2 | 14 | 34 | 24 | 58 | 17 | 1,756 | 57 | 30 | 13 | 8 | 13 | 6 |
| 21-5116 | Olean | 4 | 47 | 64 | 34 | 98 | 22 | 2,321 | 165 | 42 | 20 | 9 | 23 | 9 |
| 20-5316 | Oneonta | 3 | 24 | 34 | 15 | 49 | 13 | 1,370 | 105 | 31 | 11 | 6 | 16 | 9 |
| 19-5216 | Oswego | 1 | 28 | 41 | 35 | 76 | 23 | 1,089 | 286 | 48 | 23 | 9 | 28 | 12 |
| 17-5416 | Plattsburg | 3 | 34 | 50 | 17 | 67 | 13 | 2,334 | 96 | 31 | 10 | 3 | 14 | 6 |
| 20-5107 | Poughkeepsie | 2 | 28 | 48 | 44 | 92 | 40 | 678 | 133 | 63 | 12 | 6 | 24 | 13 |
| 19-5101 | Rochester | 6 | 127 | 169 | 421 | 590 | 328 | 2,971 | 1,232 | 532 | 126 | 42 | 174 | 98 |
| 19-5306 | Rome | 3 | 7 | 8 | 32 | 40 | 32 | 375 | 82 | 45 | 12 | 8 | 13 | 9 |
| 19-5106 | Schenectady | 2 | 36 | 56 | 158 | 214 | 96 | 786 | 247 | 109 | 23 | 8 | 61 | 29 |
| 19-5201 | Syracuse | 4 | 55 | 113 | 259 | 372 | 209 | 1,968 | 411 | 237 | 93 | 53 | 117 | 95 |
| 19-5407 | Troy | 3 | 25 | 34 | 132 | 166 | 73 | 1,083 | 107 | 48 | 23 | 14 | 37 | 26 |
| 19-5301 | Utica | 4 | 44 | 76 | 140 | 216 | 102 | 2,493 | 350 | 163 | 64 | 53 | 86 | 65 |
| 18-5206 | Watertown | 1 | 35 | 77 | 44 | 121 | 32 | 2,830 | 227 | 65 | 29 | 18 | 44 | 21 |
| New York City Multiple Market | | - | 421 | 503 | 10,442 | 10,945 | 1,867 | 4,301 | 3,733 | 642 | 676 | 297 | 1,803 | 730 |
| | **NEW YORK** | | | | | | | | | | | | | |
| 21-5501 | New York | - | 8 | - | 6,930 | 6,930 | 6,930 | 299 | 670 | 660 | 320 | 320 | 766 | 763 |
| 21-5501 | Bronx | 2 | 4 | - | 1,265 | 1,265 | 1,265 | 41 | 24 | 18 | 17 | 17 | 24 | 21 |
| 21-5501 | Brooklyn-Queens/2 | 1 | 1 | - | 3,640 | 3,640 | 3,640 | 179 | - | - | 6 | 6 | 11 | 11 |
| 21-5501 | Manhattan | 4 | 3 | - | 2,026 | 2,026 | 2,026 | 79 | 646 | 642 | 297 | 297 | 731 | 730 |
| 21-5516 | Freeport | 1 | 61 | 158 | 194 | 352 | 15 | 706 | 694 | 5 | 4 | # | 47 | 2 |
| 21-5517 | Oyster Bay | 1 | 37 | 38 | 74 | 112 | 20 | 478 | 105 | 4 | 3 | # | 22 | 1 |
| 21-5501 | Yonkers/ | 2 | 47 | 74 | 447 | 521 | 135 | 448 | 96 | - | 14 | - | 47 | - |
| | **CONNECTICUT** | | | | | | | | | | | | | |
| 21-5506 | Stamford | 2 | 9 | 38 | 59 | 97 | 46 | 63 | 49 | 30 | 5 | 2 | 13 | 6 |
| | **NEW JERSEY** | | | | | | | | | | | | | |
| 21-5502 | Elizabeth | 4 | 35 | 7 | 343 | 350 | 115 | 342 | 354 | 105 | 52 | 10 | 72 | 25 |
| 21-5508 | Hackensack | 5 | 68 | 41 | 203 | 244 | 25 | 217 | 215 | 18 | 7 | # | 38 | 4 |
| 21-5502 | Jersey City | 6 | 11 | - | 632 | 632 | 632 | 41 | 298 | 186 | 163 | 106 | 420 | 366 |
| 21-5502 | Newark | 5 | 34 | 49 | 994 | 1,042 | 442 | 398 | 644 | 356 | 54 | 41 | 159 | 109 |
| 21-5507 | New Brunswick | 3 | 43 | 51 | 163 | 214 | 35 | 527 | 279 | 30 | 34 | 3 | 154 | 6 |
| 21-5401 | Paterson | 4 | 68 | 48 | 403 | 451 | 139 | 782 | 359 | 139 | 19 | 2 | 65 | 27 |
| | **NEW JERSEY** | | | | | | | | | | | | | |
| 23-5506 | Atlantic City | 2 | 17 | 32 | 109 | 141 | 66 | 876 | 108 | 49 | 4 | 1 | 18 | 9 |
| 22-5516 | Asbury Park-Long Branch | 2 | 40 | 72 | 75 | 148 | 18 | 502 | 178 | 52 | 4 | # | 20 | 6 |
| 21-5417 | Dover | 3 | 36 | 40 | 31 | 71 | 10 | 720 | 113 | 22 | 12 | 1 | 14 | 2 |
| 22-5416 | Phillipsburg | See Easton, Pennsylvania | | | | | | | | | | | | |
| 22-5401 | Trenton | 3 | 62 | 118 | 170 | 288 | 123 | 1,073 | 316 | 134 | 72 | 59 | 102 | 74 |
| TOTAL NEW YORK AND NEW JERSEY | | - 1,701 | 2,502 | 13,828 | 16,389 | 10,852 | 57,146 | 12,101 | 4,670 | 1,951 | 1,227 | 3,349 | 2,272 | |
| TOTAL TRUNK LINE | | - 4,087 | 6,451 | 22,450 | 28,901 | 17,038 | 117,266 | 25,019 | 10,286 | 5,977 | 2,978 | 6,676 | 4,338 | |

* Originated and terminated cars and industries of trade center not reported - not served by Class I Railroad.

\# Industries not reported separately - included with Manhattan.

/ Originated and terminated cars and industries of trade center not reported separately - included with New York.

\# Less than 500.

SECTION 10. TRADE AREA MARKETS

Analysis 10.4 Freight Traffic of Pennsylvania, Maryland and Delaware Trade Areas - 1932

| NUMBER | TRADE AREA TRADE CENTER | NUMBER OF RAIL-ROADS | NUMBER OF COM-MUN-ITIES | POPULATION TRADE AREA RURAL (000) | POPULATION TRADE AREA URBAN (000) | POPULATION TRADE AREA TOTAL (000) | POPULATION TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | ON TRACK INDUSTRIES TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | CARS ORIGINATED TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | CARS TERMINATED TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PENNSYLVANIA | | | | | | | | | | | | | |
| 22-5306 | Allentown | 4 | 63 | 104 | 162 | 265 | 93 | 742 | 365 | 160 | 44 | 3 | 60 | 35 |
| 22-5106 | Altoona | 2 | 70 | 88 | 126 | 214 | 82 | 1,836 | 302 | 53 | 76 | 13 | 43 | 21 |
| 22-5307 | Bethlehem | 5 | 6 | 8 | 67 | 76 | 58 | 186 | 97 | 56 | 31 | 12 | 22 | 14 |
| 21-5016 | Bradford | 4 | 20 | 17 | 19 | 36 | 19 | 494 | 100 | 56 | 14 | 8 | 18 | 7 |
| 22-5016 | Butler | 3 | 36 | 65 | 24 | 89 | 24 | 973 | 114 | 46 | 27 | 11 | 15 | 9 |
| 21-5316 | Carbondale | 3 | 13 | 28 | 38 | 66 | 20 | 787 | 106 | 44 | 91 | 28 | 35 | 7 |
| 23-5216 | Carlisle | 2 | 21 | 24 | 13 | 37 | 13 | 317 | 50 | 22 | 4 | 3 | 6 | 5 |
| 23-5217 | Chambersburg | 3 | 37 | 50 | 31 | 81 | 14 | 1,207 | 153 | 46 | 12 | 5 | 15 | 8 |
| 22-5131 | Clearfield | 3 | 24 | 38 | 16 | 54 | 9 | 800 | 90 | 33 | 14 | 8 | 11 | 6 |
| 23-5016 | Connellsville | 6 | 33 | 63 | 28 | 92 | 13 | 502 | 134 | 39 | 11 | 7 | 11 | 7 |
| 22-5017 | Du Bois | 4 | 23 | 34 | 27 | 61 | 12 | 902 | 102 | 28 | 20 | 6 | 12 | 5 |
| 22-5406 | Easton | 7 | 45 | 60 | 92 | 152 | 34 | 1,076 | 271 | 90 | 40 | 6 | 39 | 11 |
| 21-4901 | Erie | 5 | 33 | 49 | 133 | 183 | 116 | 1,092 | 368 | 229 | 30 | 24 | 75 | 65 |
| 22-5206 | Harrisburg | 2 | 54 | 91 | 130 | 221 | 80 | 1,329 | 241 | 108 | 54 | 31 | 71 | 39 |
| 21-5306 | Hazelton | 2 | 7 | 36 | 59 | 95 | 37 | 420 | 116 | 76 | 96 | 77 | 15 | 10 |
| 22-5132 | Huntingdon | 1 | 11 | 33 | 12 | 46 | 8 | 1,021 | 20 | 6 | 8 | 2 | 4 | 3 |
| 22-5031 | Indiana | 3 | 23 | 41 | 12 | 53 | 10 | 497 | 63 | 32 | 2 | 2 | 4 | 3 |
| 23-5006 | Johnstown | 4 | 44 | 113 | 113 | 226 | 67 | 1,198 | 176 | 39 | 25 | 19 | 24 | 13 |
| 22-5032 | Kittanning | 4 | 43 | 65 | 14 | 79 | 8 | 737 | 125 | 26 | 33 | 9 | 11 | 4 |
| 23-5306 | Lancaster | 2 | 68 | 92 | 99 | 191 | 60 | 877 | 282 | 106 | 38 | 21 | 57 | 31 |
| 22-5308 | Lebanon | 2 | 15 | 32 | 36 | 67 | 26 | 360 | 72 | 34 | 13 | 9 | 13 | 10 |
| 22-5216 | Lewiston | 1 | 20 | 38 | 16 | 55 | 13 | 970 | 47 | 24 | 11 | 6 | 15 | 9 |
| 22-5231 | Lock Haven | 2 | 26 | 44 | 23 | 67 | 10 | 1,737 | 100 | 32 | 22 | 4 | 18 | 9 |
| 22-5316 | Mahanoy City | 4 | 14 | 19 | 54 | 73 | 15 | 233 | 75 | 27 | 36 | # | 33 | 3 |
| 21-4916 | Meadville | 3 | 19 | 28 | 17 | 45 | 17 | 623 | 79 | 32 | 4 | 3 | 11 | 7 |
| 22-4906 | New Castle | 5 | 24 | 41 | 67 | 108 | 49 | 430 | 199 | 116 | 24 | 13 | 22 | 14 |
| 21-5017 | Oil City | 4 | 29 | 45 | 44 | 89 | 22 | 1,445 | 143 | 30 | 48 | 15 | 28 | 13 |
| 22-5317 | Pottstown | 2 | 17 | 26 | 30 | 56 | 19 | 169 | 139 | 47 | 16 | 8 | 23 | 9 |
| 22-5318 | Pottsville | 5 | 38 | 81 | 97 | 177 | 24 | 579 | 158 | 46 | 219 | 19 | 75 | 17 |
| 22-5033 | Punxsutawney | 3 | 23 | 23 | 9 | 33 | 9 | 366 | 65 | 17 | 18 | 13 | 9 | 7 |
| 22-5301 | Reading | 2 | 56 | 102 | 142 | 244 | 111 | 916 | 323 | 164 | 61 | 51 | 61 | 48 |
| 21-5116 | St.Marys-Ridgway | 3 | 27 | 17 | 21 | 39 | 6 | 1,198 | 43 | 21 | 5 | 3 | 6 | 2 |
| 21-5301 | Scranton | 6 | 45 | 59 | 312 | 371 | 143 | 1,549 | 432 | 216 | 326 | 158 | 156 | 102 |
| 22-5217 | Shamokin | 3 | 13 | 47 | 52 | 99 | 20 | 198 | 81 | 32 | 72 | 13 | 61 | 8 |
| 22-4907 | Sharon | 5 | 26 | 31 | 54 | 85 | 26 | 525 | 180 | 81 | 23 | 12 | 33 | 14 |
| 22-5218 | Sunbury | 3 | 36 | 53 | 42 | 95 | 16 | 1,041 | 185 | 37 | 25 | 3 | 26 | 8 |
| 23-5021 | Uniontown | 5 | 86 | 144 | 40 | 184 | 20 | 656 | 198 | 33 | 62 | 3 | 19 | 6 |
| 21-5018 | Warren | 4 | 31 | 30 | 21 | 51 | 15 | 1,099 | 131 | 30 | 19 | 7 | 19 | 7 |
| 23-4916 | Washington | 4 | 20 | 61 | 42 | 103 | 25 | 675 | 87 | 34 | 35 | 16 | 21 | 10 |
| 21-5307 | Wilkes-Barre | 6 | 43 | 93 | 257 | 350 | 87 | 1,321 | 228 | 119 | 163 | 39 | 49 | 53 |
| 21-5206 | Williamsport | 5 | 19 | 37 | 60 | 97 | 46 | 1,495 | 142 | 86 | 38 | 33 | 48 | 41 |
| 23-5206 | York | 3 | 57 | 109 | 88 | 197 | 55 | 1,341 | 332 | 134 | 61 | 40 | 63 | 41 |
| | Philadelphia Multiple Market | - | 286 | 335 | 2,683 | 3,018 | 1,951 | 3,298 | 2,296 | 1,171 | 434 | 298 | 669 | 465 |
| | PENNSYLVANIA | | | | | | | | | | | | | |
| 22-5407 | Norristown | 2 | 60 | 45 | 89 | 134 | 36 | 417 | 284 | 22 | 23 | 4 | 37 | 7 |
| 22-5401 | Philadelphia | 3 | 41 | 54 | 2,059 | 2,114 | 1,951 | 415 | 1,295 | 1,171 | 310 | 298 | 483 | 465 |
| 22-5402 | W. Philadelphia* | 4 | 108 | 72 | 206 | 278 | 206 | 479 | 336 | - | 25 | - | 63 | - |
| | NEW JERSEY | | | | | | | | | | | | | |
| 22-5403 | Camden | 3 | 77 | 165 | 329 | 493 | 119 | 1,987 | 381 | 104 | 75 | 33 | 86 | 35 |
| | Pittsburgh Multiple Market | - | 229 | 407 | 1,470 | 1,878 | 670 | 2,311 | 1,623 | 598 | 973 | 346 | 586 | 394 |
| 23-5007 | Aliquippa | 3 | 16 | 12 | 101 | 112 | 27 | 136 | 87 | 13 | 25 | 1 | 24 | 2 |
| 23-5018 | Beaver Falls | 3 | 17 | 36 | 48 | 84 | 17 | 322 | 92 | 26 | 17 | 5 | 15 | 5 |
| 23-5019 | Braddock | 2 | 11 | 22 | 88 | 110 | 19 | 228 | 52 | 22 | 22 | 1 | 6 | 2 |
| 23-5020 | Greensburg | 2 | 49 | 99 | 54 | 153 | 17 | 467 | 259 | 12 | 187 | 1 | 14 | 3 |
| 23-5008 | McKeesport | 4 | 45 | 59 | 183 | 242 | 55 | 306 | 275 | 23 | 141 | 8 | 30 | 8 |
| 23-5017 | Natrona | 3 | 34 | 3 | 111 | 114 | 21 | 158 | 110 | 5 | 71 | 1 | 21 | 1 |
| 23-5001 | Pittsburgh | 7 | 57 | 177 | 886 | 1,062 | 670 | 694 | 748 | 598 | 510 | 346 | 416 | 394 |
| | MARYLAND | | | | | | | | | | | | | |
| 23-5301 | Baltimore | 3 | 113 | 226 | 860 | 1,086 | 805 | 2,677 | 1,124 | 500 | 456 | 223 | 446 | 214 |
| 24-5331 | Cambridge | 1 | 15 | 39 | 13 | 52 | 9 | 956 | 7 | 2 | 4 | 2 | 6 | 2 |
| 23-5106 | Cumberland | 3 | 95 | 144 | 67 | 211 | 38 | 5,294 | 260 | 67 | 41 | 16 | 36 | 23 |
| 23-5216 | Frederick | 3 | 36 | 47 | 18 | 65 | 14 | 916 | 89 | 31 | 6 | 3 | 9 | 4 |
| 23-5207 | Hagerstown | 3 | 19 | 35 | 31 | 66 | 31 | 459 | 118 | 90 | 16 | 13 | 21 | 18 |
| 24-5416 | Salisbury | 1 | 49 | 56 | 20 | 116 | 11 | 1,973 | 75 | 11 | 17 | 1 | 17 | 3 |
| | DISTRICT OF COLUMBIA | | | | | | | | | | | | | |
| 24-5201 | Washington | 5 | 86 | 217 | 575 | 791 | 487 | 4,632 | 334 | 124 | 29 | 16 | 160 | 110 |
| | DELAWARE | | | | | | | | | | | | | |
| 23-5302 | Wilmington | 3 | 100 | 141 | 148 | 288 | 107 | 2,285 | 278 | 108 | 80 | 20 | 75 | 26 |
| | TOTAL PENNSYLVANIA, MARYLAND, DELAWARE | - | 2,386 | 3,949 | 8,622 | 12,572 | 6,187 | 60,120 | 12,918 | 5,616 | 4,026 | 1,751 | 3,327 | 2,065 |

* Originated and Terminated Cars and Industries of Trade Center reported with Philadelphia. # Less than 500



SECTION 10. TRADE AREA MARKETS

Analysis 10.5 Freight Traffic of Michigan and Ohio Trade Areas - 1932

| NUMBER | TRADE AREA TRADE CENTER | NUMBER OF RAIL-ROADS | NUMBER OF COM-MUN-ITIES | POPULATION TRADE AREA RURAL (000) | POPULATION TRADE AREA URBAN (000) | POPULATION TRADE AREA TOTAL (000) | POPULATION TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | ON TRACK INDUSTRIES TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | CARS ORIGINATED TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | CARS TERMINATED TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MICHIGAN | | | | | | | | | | | | | |
| 21-4616 | Adrian | 4 | 22 | 28 | 18 | 46 | 13 | 632 | 116 | 43 | 11 | 6 | 10 | 6 |
| 18-4616 | Alpena | 1 | 12 | 22 | 15 | 38 | 12 | 2,507 | 21 | 15 | 10 | 5 | 7 | 6 |
| 21-4606 | Ann Arbor | 4 | 14 | 28 | 37 | 66 | 27 | 704 | 99 | 56 | 3 | 1 | 11 | 7 |
| 21-4506 | Battle Creek | 3 | 14 | 45 | 55 | 100 | 46 | 1,108 | 215 | 123 | 25 | 23 | 30 | 23 |
| 19-4606 | Bay City | 2 | 19 | 55 | 47 | 103 | 47 | 3,600 | 175 | 155 | 14 | 10 | 12 | 7 |
| 19-4431 | Cadillac | 3 | 33 | 34 | 10 | 44 | 10 | 2,318 | 174 | 39 | 10 | 3 | 9 | 4 |
| 20-4401 | Grand Rapids | 4 | 97 | 191 | 215 | 406 | 156 | 1,967 | 401 | 116 | 38 | 23 | 53 | 31 |
| 21-4507 | Jackson | 4 | 31 | 67 | 69 | 136 | 55 | 1,551 | 237 | 114 | 23 | 14 | 30 | 20 |
| 21-4406 | Kalamazoo | 5 | 47 | 98 | 81 | 179 | 55 | 2,182 | 469 | 239 | 26 | 14 | 55 | 34 |
| 20-4506 | Lansing | 3 | 14 | 85 | 105 | 190 | 78 | 2,206 | 387 | 189 | 25 | 12 | 29 | 20 |
| 19-4432 | Manistee | 2 | 19 | 28 | 17 | 45 | 8 | 1,823 | 123 | 27 | 8 | # | 10 | 1 |
| 20-4406 | Muskegon | 3 | 19 | 53 | 65 | 119 | 57 | 1,585 | 196 | 101 | 17 | 14 | 16 | 10 |
| 18-4531 | Petoskey | 3 | 33 | 44 | 13 | 57 | 6 | 3,199 | 127 | 29 | 8 | 4 | 9 | 4 |
| 20-4606 | Pontiac | 3 | 21 | 35 | 65 | 100 | 65 | 531 | 137 | 75 | 22 | 13 | 14 | 12 |
| 20-4706 | Port Huron | 2 | 20 | 52 | 38 | 90 | 31 | 1,296 | 165 | 67 | 25 | 23 | 20 | 17 |
| 20-4607 | Saginaw | 5 | 87 | 149 | 111 | 260 | 81 | 4,579 | 753 | 280 | 61 | 16 | 56 | 26 |
| 18-4416 | Traverse City | 2 | 14 | 22 | 13 | 34 | 13 | 1,504 | 77 | 37 | 3 | 2 | 5 | 5 |
| | Detroit Multiple Market | - | 36 | 132 | 1,947 | 2,080 | 1,569 | 1,473 | 2,125 | 1,865 | 246 | 227 | 417 | 374 |
| 21-4706 | Dearborn | 4 | 14 | 49 | 144 | 193 | 50 | 487 | 72 | 14 | 13 | # | 18 | 2 |
| 21-4701 | Detroit | 6 | 3 | 2 | 1,698 | 1,699 | 1,569 | 186 | 1,878 | 1,865 | 227 | 227 | 375 | 374 |
| 21-4717 | Mt. Clemens | 5 | 14 | 29 | 39 | 68 | 13 | 330 | 128 | 24 | 5 | 2 | 19 | 7 |
| 21-4716 | Royal Oak | 3 | 5 | 54 | 66 | 120 | 23 | 470 | 47 | 26 | # | # | 5 | 3 |
| | OHIO | | | | | | | | | | | | | |
| 22-4801 | Akron | 5 | 45 | 99 | 341 | 440 | 255 | 1,564 | 551 | 257 | 74 | 52 | 109 | 79 |
| 21-4916 | Ashtabula | 4 | 19 | 35 | 37 | 72 | 23 | 195 | 95 | 71 | 4 | 4 | 7 | 7 |
| 24-4831 | Athens | 3 | 23 | 48 | 23 | 70 | 7 | 939 | 85 | 30 | 9 | 2 | 12 | 5 |
| 22-4802 | Canton | 4 | 60 | 101 | 177 | 278 | 105 | 1,672 | 528 | 208 | 84 | 31 | 61 | 32 |
| 24-4716 | Chillicothe | 4 | 26 | 56 | 30 | 85 | 18 | 1,545 | 109 | 44 | 9 | 6 | 13 | 9 |
| 25-4601 | Cincinnati | 7 | 153 | 303 | 732 | 1,036 | 516 | 5,874 | 1,214 | 770 | 277 | 218 | 266 | 210 |
| 24-4701 | Columbus | 6 | 66 | 123 | 336 | 460 | 291 | 2,479 | 743 | 507 | 118 | 95 | 142 | 124 |
| 24-4601 | Dayton | 5 | 21 | 88 | 226 | 314 | 201 | 932 | 492 | 319 | 49 | 34 | 80 | 60 |
| 22-4916 | E. Liverpool | 2 | 16 | 35 | 47 | 82 | 23 | 401 | 116 | 37 | 44 | 4 | 35 | 5 |
| 24-4616 | Findlay | 5 | 15 | 25 | 24 | 49 | 19 | 557 | 96 | 58 | 12 | 5 | 8 | 5 |
| 24-4631 | Greenville | 2 | 21 | 32 | 11 | 44 | 7 | 675 | 95 | 33 | 5 | 2 | 5 | 2 |
| 24-4606 | Hamilton | 2 | 7 | 16 | 55 | 71 | 52 | 249 | 93 | 82 | 19 | 19 | 23 | 22 |
| 24-4717 | Lancaster | 3 | 22 | 36 | 25 | 61 | 19 | 881 | 106 | 29 | 14 | 6 | 11 | 5 |
| 23-4606 | Lima | 8 | 91 | 123 | 86 | 208 | 42 | 2,699 | 584 | 110 | 48 | 16 | 48 | 19 |
| 23-4706 | Mansfield | 5 | 40 | 71 | 67 | 139 | 34 | 1,605 | 282 | 113 | 44 | 17 | 56 | 24 |
| 24-4816 | Marietta | 2 | 12 | 29 | 14 | 43 | 14 | 636 | 74 | 49 | 6 | 4 | 6 | 5 |
| 23-4706 | Marion | 5 | 40 | 44 | 45 | 89 | 31 | 1,309 | 225 | 74 | 27 | 7 | 20 | 11 |
| 23-4707 | Newark | 3 | 21 | 45 | 40 | 85 | 31 | 1,115 | 184 | 75 | 24 | 6 | 15 | 7 |
| 23-4616 | Piqua | 4 | 18 | 28 | 34 | 62 | 16 | 697 | 126 | 57 | 9 | 5 | 13 | 8 |
| 25-4706 | Portsmouth | 4 | 18 | 86 | 48 | 134 | 43 | 1,925 | 93 | 65 | 20 | 18 | 21 | 17 |
| 22-4716 | Sandusky | 5 | 29 | 32 | 46 | 78 | 25 | 787 | 258 | 81 | 25 | 12 | 111 | 89 |
| 24-4606 | Springfield | 4 | 44 | 66 | 86 | 152 | 69 | 1,383 | 188 | 86 | 26 | 18 | 33 | 22 |
| 23-4906 | Steubenville | 4 | 23 | 45 | 69 | 114 | 35 | 471 | 118 | 49 | 86 | 21 | 43 | 23 |
| 22-4601 | Toledo | 12 | 150 | 234 | 391 | 624 | 291 | 4,207 | 1,214 | 501 | 219 | 145 | 390 | 326 |
| 24-4731 | Washington C.H. | 4 | 12 | 24 | 12 | 37 | 8 | 687 | 67 | 31 | 4 | 2 | 4 | 2 |
| 22-4901 | Youngstown | 5 | 46 | 75 | 294 | 369 | 170 | 1,199 | 486 | 169 | 175 | 44 | 129 | 75 |
| 23-4806 | Zanesville | 5 | 70 | 124 | 72 | 196 | 36 | 2,900 | 250 | 118 | 63 | 12 | 32 | 14 |
| | Cleveland Multiple Market | - | 63 | 116 | 1,278 | 1,394 | 900 | 2,069 | 1,737 | 1,340 | 331 | 196 | 526 | 371 |
| 22-4803 | Cleveland | 6 | 23 | 33 | 1,011 | 1,045 | 900 | 557 | 1,432 | 1,340 | 197 | 196 | 382 | 371 |
| 22-4817 | Euclid* | 4 | 17 | 35 | 167 | 202 | 13 | 798 | 107 | - | 2 | - | 7 | - |
| 22-4806 | Lorain | 5 | 17 | 32 | 77 | 109 | 45 | 497 | 122 | 49 | 118 | 94 | 107 | 95 |
| 22-4818 | Painesville | 3 | 6 | 16 | 23 | 38 | 11 | 217 | 76 | 50 | 14 | 13 | 29 | 27 |
| | TOTAL MICHIGAN AND OHIO | - | 1,807 | 3,432 | 7,780 | 11,212 | 5,958 | 81,668 | 17,517 | 9,718 | 2,476 | 1,558 | 3,173 | 2,393 |
| | TOTAL CENTRAL | - | 5,253 | 7,255 | 16,214 | 23,469 | 12,320 | 185,299 | 41,328 | 20,941 | 6,138 | 3,795 | 6,936 | 5,048 |

* Originated and Terminated Cars and Industries of Trade Center reported with Cleveland. # Less than 500.

SECTION 10. TRADE AREA MARKETS

Analysis 10.6 Freight Traffic of Illinois, Indiana and Wisconsin Trade Areas - 1932

| NUMBER | TRADE AREA TRADE CENTER | NUMBER OF COM- RAIL- ROADS | MUN- ITIES | POPULATION TRADE AREA RURAL (000) | URBAN (000) | TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILLINOIS | | | | | | | | | | | | | |
| 22-4206 | Aurora | 5 | 38 | 37 | 71 | 109 | 47 | 1,124 | 338 | 133 | 18 | 9 | 35 | 22 |
| 23-4206 | Bloomington | 7 | 82 | 61 | 48 | 109 | 31 | 1,943 | 279 | 76 | 23 | 10 | 30 | 21 |
| 27-4217 | Cairo | 9 | 162 | 176 | 53 | 229 | 14 | 5,703 | 405 | 80 | 34 | 20 | 42 | 12 |
| 24-4306 | Danville | 10 | 93 | 73 | 50 | 122 | 37 | 1,872 | 332 | 80 | 38 | 21 | 29 | 21 |
| 24-4206 | Decatur | 6 | 139 | 104 | 92 | 196 | 58 | 3,300 | 659 | 148 | 68 | 34 | 77 | 45 |
| 22-4207 | Elgin | 5 | 34 | 15 | 44 | 60 | 36 | 363 | 162 | 85 | 9 | 2 | 12 | 7 |
| 21-4116 | Freeport | 5 | 45 | 46 | 27 | 73 | 22 | 1,230 | 246 | 105 | 17 | 10 | 18 | 12 |
| 23-4106 | Galesburg | 3 | 38 | 33 | 40 | 73 | 29 | 1,257 | 237 | 92 | 22 | 16 | 22 | 16 |
| 22-4208 | Joliet | 9 | 43 | 72 | 52 | 124 | 43 | 1,235 | 276 | 171 | 74 | 29 | 44 | 29 |
| 23-4316 | Kankakee | 8 | 76 | 65 | 29 | 95 | 21 | 2,302 | 259 | 65 | 38 | 11 | 20 | 11 |
| 23-4116 | Kewanee | 4 | 25 | 25 | 20 | 45 | 17 | 878 | 135 | 23 | 14 | 2 | 8 | 4 |
| 27-4231 | Marion- | 6 | 45 | 58 | 51 | 109 | 9 | 1,094 | 166 | 15 | 122 | 1 | 19 | 3 |
| 26-4216 | Mount Vernon | 8 | 74 | 85 | 57 | 141 | 12 | 2,579 | 176 | 29 | 129 | 3 | 18 | 5 |
| 23-4101 | Peoria | 11 | 129 | 132 | 161 | 293 | 105 | 3,994 | 666 | 251 | 115 | 51 | 106 | 65 |
| 22-4231 | Peru-La Salle | 6 | 67 | 56 | 60 | 115 | 9 | 1,737 | 332 | 65 | 59 | 25 | 32 | 14 |
| 24-4006 | Quincy | 4 | 47 | 63 | 39 | 102 | 39 | 2,595 | 328 | 188 | 23 | 12 | 22 | 18 |
| 21-4206 | Rockford | 5 | 64 | 93 | 134 | 227 | 86 | 2,584 | 675 | 321 | 33 | 11 | 52 | 27 |
| 24-4106 | Springfield | 9 | 155 | 132 | 129 | 261 | 72 | 4,024 | 628 | 133 | 83 | 22 | 57 | 25 |
| 23-4216 | Streator | 10 | 45 | 30 | 15 | 45 | 15 | 1,074 | 114 | 54 | 17 | 8 | 15 | 11 |
| 24-4216 | Urbana-Champaign | 7 | 61 | 40 | 39 | 79 | 13 | 1,377 | 268 | 81 | 19 | 7 | 22 | 15 |
| Chicago | Multiple Market | - | 272 | 197 | 4,306 | 4,504 | 3,376 | 3,022 | 5,456 | 4,548 | 1,321 | 1,195 | 1,748 | 1,403 |
| | ILLINOIS | | | | | | | | | | | | | |
| 22-4301 | Chicago | 24 | 30 | - | 3,376 | 3,376 | 3,376 | 199 | 4,556 | 4,548 | 1,250 | 1,195 | 1,569 | 1,403 |
| 22-4306 | Evanston* | 4 | 47 | 28 | 179 | 207 | 63 | 525 | 287 | - | 25 | # | 93 | 4 |
| 22-4307 | Oak Park* | 13 | 93 | 85 | 414 | 499 | 64 | 782 | 313 | -- | 25 | # | 61 | 6 |
| | INDIANA | | | | | | | | | | | | | |
| 22-4303 | East Chicago | 14 | 102 | 84 | 337 | 421 | 55 | 1,516 | 300 | 45 | 21 | 1 | 25 | 3 |
| | INDIANA | | | | | | | | | | | | | |
| 24-4506 | Anderson | 3 | 15 | 28 | 55 | 83 | 40 | 450 | 205 | 122 | 17 | 13 | 26 | 17 |
| 25-4416 | Bedford | 4 | 36 | 41 | 19 | 60 | 13 | 1,119 | 130 | 70 | 21 | 7 | 20 | 8 |
| 24-4416 | Crawfordsville | 4 | 23 | 26 | 10 | 36 | 10 | 652 | 69 | 30 | 4 | 2 | 7 | 4 |
| 22-4406 | Elkhart | 4 | 18 | 40 | 46 | 87 | 33 | 930 | 239 | 66 | 15 | 8 | 24 | 13 |
| 26-4301 | Evansville | 7 | 177 | 213 | 169 | 381 | 102 | 5,671 | 1,241 | 251 | 153 | 32 | 60 | 33 |
| 22-4501 | Ft. Wayne | 8 | 107 | 142 | 157 | 299 | 115 | 3,497 | 667 | 177 | 88 | 42 | 72 | 45 |
| 23-4416 | Frankfort | 4 | 14 | 15 | 12 | 27 | 12 | 408 | 79 | 46 | 4 | 4 | 6 | 5 |
| 23-4516 | Huntington | 3 | 7 | 16 | 13 | 29 | 13 | 386 | 42 | 33 | 4 | 4 | 6 | 6 |
| 24-4401 | Indianapolis | 7 | 296 | 263 | 463 | 726 | 364 | 6,220 | 1,330 | 486 | 178 | 128 | 221 | 161 |
| 23-4406 | Kokomo | 2 | 15 | 22 | 38 | 60 | 33 | 527 | 114 | 71 | 9 | 7 | 13 | 12 |
| 23-4407 | La Fayette | 4 | 38 | 36 | 35 | 71 | 26 | 1,220 | 174 | 77 | 15 | 9 | 19 | 15 |
| 23-4417 | Logansport | 5 | 57 | 56 | 21 | 77 | 19 | 1,704 | 207 | 54 | 18 | 7 | 15 | 9 |
| 25-4531 | Madison | 4 | 18 | 40 | 10 | 49 | 7 | 1,166 | 31 | 4 | 2 | 1 | 4 | 1 |
| 23-4517 | Marion | 4 | 22 | 28 | 30 | 57 | 24 | 533 | 142 | 84 | 12 | 8 | 15 | 11 |
| 22-4308 | Michigan City | 11 | 32 | 22 | 42 | 64 | 27 | 687 | 151 | 69 | 9 | 5 | 17 | 8 |
| 23-4506 | Muncie | 4 | 51 | 68 | 80 | 147 | 47 | 1,549 | 389 | 123 | 37 | 22 | 49 | 25 |
| 23-4418 | Peru | 5 | 23 | 21 | 16 | 38 | 13 | 637 | 127 | 57 | 9 | 7 | 10 | 7 |
| 24-4507 | Richmond | 5 | 33 | 45 | 51 | 96 | 32 | 1,080 | 161 | 21 | 13 | 8 | 20 | 11 |
| 22-4401 | South Bend | 10 | 62 | 111 | 183 | 294 | 104 | 2,176 | 490 | 104 | 25 | 12 | 52 | 22 |
| 24-4307 | Terre Haute | 9 | 171 | 198 | 121 | 319 | 63 | 5,030 | 593 | 139 | 167 | 34 | 64 | 29 |
| 25-4316 | Vincennes | 9 | 80 | 121 | 62 | 183 | 18 | 3,505 | 346 | 71 | 73 | 8 | 37 | 9 |
| 23-4431 | Wabash | 4 | 14 | 14 | 12 | 25 | 9 | 425 | 87 | 46 | 4 | 2 | 6 | 3 |
| | WISCONSIN | | | | | | | | | | | | | |
| 19-4206 | Appleton | 3 | 35 | 46 | 61 | 108 | 25 | 1,172 | 341 | 61 | 25 | 7 | 41 | 13 |
| 20-4206 | Fond du Lac | 3 | 32 | 51 | 41 | 92 | 26 | 1,351 | 304 | 122 | 14 | 7 | 22 | 11 |
| 19-4207 | Green Bay | 5 | 44 | 95 | 55 | 150 | 37 | 3,385 | 372 | 117 | 44 | 36 | 31 | 21 |
| 21-4216 | Janesville | 2 | 17 | 26 | 30 | 56 | 22 | 812 | 211 | 101 | 20 | 13 | 19 | 14 |
| 21-4306 | Kenosha | 3 | 16 | 16 | 53 | 70 | 50 | 366 | 122 | 65 | 9 | 6 | 13 | 9 |
| 20-4106 | Madison | 4 | 104 | 173 | 88 | 261 | 58 | 6,160 | 754 | 163 | 36 | 14 | 66 | 32 |
| 19-4316 | Manitowoc | 3 | 21 | 26 | 33 | 59 | 23 | 602 | 130 | 57 | 22 | 13 | 18 | 18 |
| 20-4201 | Milwaukee | 5 | 99 | 161 | 753 | 914 | 578 | 3,068 | 1,878 | 1,235 | 299 | 239 | 321 | 247 |
| 19-4208 | Oshkosh | 3 | 18 | 32 | 44 | 76 | 40 | 1,098 | 265 | 127 | 12 | 10 | 16 | 13 |
| 21-4307 | Racine | 2 | 8 | 15 | 68 | 83 | 68 | 227 | 141 | 122 | 11 | 9 | 12 | 11 |
| 20-4306 | Sheboygan | 2 | 9 | 25 | 46 | 71 | 39 | 521 | 142 | 61 | 16 | 12 | 14 | 11 |
| TOTAL ILLINOIS, INDIANA, WISCONSIN | | - | 3,146 | 3,823 | 8,434 | 12,256 | 6,362 | 103,591 | 23,811 | 11,223 | 3,662 | 2,237 | 3,763 | 2,655 |

* Industries not reported separately - included with Chicago.
\# Less than 500.



SECTION 10. TRADE AREA MARKETS

Analysis 10.7 Freight Traffic of Virginia and West Virginia Trade Areas - 1932

| NUMBER | TRADE AREA TRADE CENTER | NUMBER OF COM- RAIL- ROADS | MUN- ITIES | POPULATION TRADE AREA RURAL (000) | URBAN (000) | TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VIRGINIA | | | | | | | | | | | | | |
| 25-5116 | Charlottesville | 2 | 27 | 58 | 15 | 73 | 15 | 1,669 | 150 | 77 | 10 | 5 | 15 | 9 |
| 26-5031 | Covington | 2 | 21 | 83 | 13 | 97 | 7 | 3,332 | 86 | 20 | 22 | 8 | 33 | 18 |
| 27-5116 | Danville | 4 | 45 | 148 | 48 | 196 | 22 | 3,076 | 269 | 132 | 23 | 11 | 29 | 12 |
| 25-5231 | Fredericksburg | 1 | 6 | 74 | 7 | 81 | 7 | 2,441 | 26 | 13 | 4 | 3 | 5 | 5 |
| 25-5131 | Harrisonburg | 3 | 12 | 55 | 7 | 62 | 7 | 1,453 | 106 | 40 | 11 | 2 | 10 | 3 |
| 26-5106 | Lynchburg | 4 | 38 | 99 | 44 | 143 | 41 | 2,683 | 156 | 121 | 25 | 21 | 31 | 26 |
| 26-5401 | Norfolk | 8 | 136 | 315 | 251 | 566 | 46 | 5,432 | 524 | 331 | 139 | 91 | 388 | 313 |
| 26-5206 | Petersburg | 4 | 50 | 126 | 44 | 171 | 29 | 3,472 | 115 | 42 | 20 | 11 | 20 | 12 |
| 26-5201 | Richmond | 7 | 80 | 167 | 187 | 354 | 183 | 4,970 | 666 | 511 | 104 | 83 | 107 | 83 |
| 26-5006 | Roanoke | 4 | 34 | 189 | 106 | 295 | 69 | 5,100 | 292 | 154 | 68 | 34 | 72 | 44 |
| 25-5117 | Staunton | 3 | 13 | 32 | 18 | 50 | 12 | 1,006 | 65 | 30 | 13 | 5 | 13 | 6 |
| 24-5116 | Winchester | 3 | 22 | 37 | 13 | 50 | 11 | 1,077 | 104 | 24 | 11 | 7 | 7 | 6 |
| | WEST VIRGINIA | | | | | | | | | | | | | |
| 26-4931 | Beckley | 3 | 34 | 103 | 20 | 123 | 9 | 1,300 | 205 | 25 | 195 | 1 | 22 | 3 |
| 26-4916 | Bluefield | 4 | 38 | 243 | 38 | 281 | 23 | 3,821 | 335 | 98 | 558 | 39 | 34 | 16 |
| 25-4806 | Charleston | 4 | 82 | 208 | 77 | 285 | 60 | 3,351 | 302 | 131 | 192 | 26 | 51 | 35 |
| 24-4906 | Clarksburg | 3 | 51 | 124 | 53 | 177 | 29 | 2,990 | 201 | 66 | 35 | 17 | 26 | 18 |
| 24-5031 | Elkins | 2 | 64 | 41 | 7 | 49 | 7 | 1,963 | 111 | 34 | 25 | 2 | 9 | 3 |
| 24-5016 | Fairmont | 3 | 37 | 40 | 26 | 67 | 23 | 23,159 | 67 | 23 | 49 | 11 | 16 | 14 |
| 24-5032 | Grafton | 2 | 17 | 23 | 10 | 33 | 8 | 453 | 38 | 16 | 6 | 1 | 3 | 3 |
| 25-4807 | Huntington | 6 | 69 | 329 | 116 | 445 | 76 | 5,735 | 437 | 146 | 201 | 30 | 94 | 59 |
| 26-4831 | Logan | 1 | 16 | 54 | 4 | 59 | 4 | 438 | 93 | 33 | 175 | 10 | 5 | 4 |
| 23-5116 | Martinsburg | 2 | 35 | 35 | 17 | 52 | 15 | 769 | 113 | 37 | 28 | 13 | 11 | 6 |
| 24-5017 | Morgantown | 2 | 53 | 68 | 18 | 86 | 16 | 1,123 | 118 | 32 | 100 | 2 | 6 | 4 |
| 24-4806 | Parkersburg | 1 | 18 | 72 | 32 | 104 | 30 | 1,708 | 85 | 57 | 18 | 17 | 21 | 18 |
| 23-4906 | Wheeling | 4 | 59 | 146 | 147 | 293 | 62 | 2,324 | 357 | 108 | 97 | 25 | 57 | 28 |
| TOTAL POCAHONTAS TERRITORY | | - | 1,057 | 2,869 | 1,320 | 4,190 | 810 | 84,845 | 5,021 | 2,301 | 2,128 | 475 | 1,088 | 748 |

SECTION 10. TRADE AREA MARKETS

Analysis 10.8 Freight Traffic of Kentucky, Tennessee, North and South Carolina Trade Areas - 1932

| NUMBER | TRADE AREA TRADE CENTER | NUMBER OF RAIL-ROADS | NUMBER OF COM-MUN-ITIES | POPULATION TRADE AREA RURAL (000) | POPULATION TRADE AREA URBAN (000) | POPULATION TRADE AREA TOTAL (000) | POPULATION TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | ON TRACK INDUSTRIES TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | CARS ORIGINATED TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | CARS TERMINATED TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | KENTUCKY | | | | | | | | | | | | | |
| 25-4808 | Ashland | 5 | 16 | 78 | 47 | 125 | 29 | 1,604 | 148 | 53 | 43 | 25 | 30 | 21 |
| 27-4416 | Bowling Green | 1 | 50 | 157 | 24 | 181 | 12 | 4,554 | 110 | 32 | 17 | 3 | 12 | 4 |
| 26-4631 | Danville | 2 | 21 | 50 | 11 | 61 | 7 | 1,093 | 33 | 29 | 4 | 2 | 5 | 2 |
| 26-4616 | Frankfort | 1 | 3 | 9 | 12 | 21 | 12 | 199 | 29 | 27 | 2 | 2 | 3 | 3 |
| 27-4731 | Hazard | 1 | 97 | 104 | 7 | 111 | 7 | 1,828 | 99 | 4 | 120 | 3 | 8 | 3 |
| 27-4316 | Hopkinsville | 2 | 18 | 48 | 16 | 64 | 11 | 1,547 | 88 | 56 | 11 | 6 | 13 | 6 |
| 26-4606 | Lexington | 3 | 63 | 146 | 68 | 214 | 46 | 3,161 | 284 | 175 | 31 | 21 | 37 | 24 |
| 26-4501 | Louisville | 6 | 201 | 321 | 359 | 679 | 308 | 8,270 | 841 | 434 | 241 | 95 | 139 | 109 |
| 25-4631 | Maysville | 2 | 10 | 25 | 7 | 32 | 7 | 552 | 29 | 28 | 6 | 6 | 4 | 4 |
| 27-4716 | Middlesboro | 2 | 298 | 226 | 33 | 259 | 10 | 3,758 | 255 | 43 | 139 | 2 | 30 | 4 |
| 26-4416 | Owensboro | 2 | 105 | 102 | 30 | 131 | 23 | 2,065 | 133 | 59 | 72 | 5 | 12 | 6 |
| 27-4206 | Paducah | 5 | 39 | 110 | 50 | 160 | 34 | 3,222 | 164 | 65 | 23 | 14 | 25 | 16 |
| 27-4631 | Somerset | 2 | 6 | 82 | 6 | 87 | 6 | 2,074 | 25 | 20 | 1 | 1 | 5 | 2 |
| 26-4632 | Winchester | 2 | 50 | 74 | 16 | 91 | 8 | 1,979 | 74 | 32 | 8 | 2 | 8 | 3 |
| | TENNESSEE | | | | | | | | | | | | | |
| 27-4816 | Bristol | 4 | 49 | 193 | 56 | 249 | 21 | 3,779 | 141 | 67 | 22 | 8 | 28 | 11 |
| 29-4601 | Chattanooga | 4 | 64 | 224 | 149 | 372 | 120 | 6,305 | 821 | 606 | 81 | 48 | 73 | 45 |
| 28-4431 | Clarksville | 3 | 29 | 40 | 9 | 50 | 9 | 1,162 | 37 | 28 | 7 | 6 | 7 | 6 |
| 29-4431 | Columbia | 2 | 40 | 44 | 11 | 55 | 8 | 1,246 | 78 | 20 | 9 | 1 | 6 | 2 |
| 29-4216 | Jackson | 3 | 62 | 212 | 44 | 257 | 22 | 5,424 | 254 | 73 | 33 | 12 | 44 | 20 |
| 28-4806 | Johnson City | 2 | 50 | 148 | 42 | 190 | 25 | 2,838 | 152 | 126 | 18 | 8 | 18 | 11 |
| 28-4701 | Knoxville | 2 | 140 | 304 | 144 | 448 | 106 | 7,358 | 789 | 598 | 85 | 33 | 67 | 38 |
| 30-4101 | Memphis | 11 | 218 | 514 | 301 | 814 | 253 | 10,819 | 1,252 | 800 | 180 | 142 | 164 | 129 |
| 28-4731 | Morristown | 1 | 7 | 60 | 10 | 70 | 7 | 1,238 | 35 | 6 | 4 | 2 | 7 | 3 |
| 28-4531 | Murfreesboro | 2 | 10 | 82 | 21 | 103 | 8 | 2,403 | 95 | 22 | 7 | 1 | 8 | 3 |
| 28-4401 | Nashville | 3 | 126 | 350 | 180 | 530 | 154 | 8,285 | 982 | 770 | 83 | 63 | 101 | 77 |
| | NORTH CAROLINA | | | | | | | | | | | | | |
| 28-4807 | Asheville | 3 | 49 | 218 | 73 | 291 | 50 | 5,856 | 306 | 94 | 24 | 7 | 54 | 17 |
| 29-5006 | Charlotte | 4 | 112 | 423 | 209 | 632 | 83 | 6,834 | 947 | 344 | 79 | 26 | 100 | 32 |
| 27-5106 | Durham | 4 | 8 | 69 | 58 | 128 | 52 | 1,544 | 145 | 98 | 17 | 16 | 19 | 16 |
| 27-5416 | Elizabeth City | 3 | 46 | 71 | 14 | 84 | 10 | 2,232 | 50 | 30 | 6 | 3 | 4 | 2 |
| 29-5216 | Fayetteville | 2 | 52 | 77 | 18 | 95 | 13 | 1,894 | 22 | 5 | 7 | 5 | 8 | 7 |
| 28-5216 | Goldsboro | 2 | 23 | 88 | 20 | 108 | 15 | 1,515 | 61 | 32 | 10 | 7 | 12 | 8 |
| 28-5106 | Greensboro | 2 | 18 | 119 | 118 | 237 | 54 | 2,324 | 495 | 231 | 27 | 14 | 36 | 18 |
| 28-5331 | Greenville | 2 | 26 | 48 | 11 | 59 | 9 | 690 | 72 | 53 | 4 | 3 | 5 | 4 |
| 27-5231 | Henderson | 3 | 14 | 58 | 10 | 68 | 6 | 930 | 85 | 52 | 9 | 7 | 11 | 8 |
| 28-5316 | Kinston | 2 | 7 | 37 | 11 | 49 | 11 | 683 | 38 | 35 | 3 | 2 | 4 | 3 |
| 28-5317 | New Bern | 2 | 46 | 49 | 18 | 67 | 12 | 2,001 | 62 | 42 | 8 | 5 | 3 | 2 |
| 28-5206 | Raleigh | 4 | 103 | 207 | 49 | 256 | 37 | 3,595 | 342 | 148 | 29 | 11 | 40 | 20 |
| 27-5216 | Rocky Mount | 2 | 34 | 83 | 30 | 113 | 21 | 1,264 | 35 | - | 5 | 2 | 10 | 5 |
| 28-5016 | Salisbury | 1 | 8 | 42 | 22 | 64 | 17 | 631 | 172 | 141 | 4 | 3 | 9 | 8 |
| 28-5017 | Statesville | 1 | 6 | 44 | 16 | 60 | 10 | 877 | 119 | 101 | 9 | 7 | 8 | 5 |
| 28-5332 | Washington | 2 | 71 | 71 | 14 | 85 | 7 | 2,507 | 75 | 27 | 7 | 3 | 8 | 4 |
| 29-5306 | Wilmington | 2 | 94 | 181 | 36 | 218 | 32 | 5,664 | 111 | 27 | 37 | 30 | 18 | 11 |
| 28-5217 | Wilson | 2 | 12 | 32 | 13 | 45 | 13 | 373 | 43 | 31 | 5 | 5 | 6 | 6 |
| 28-5006 | Winston-Salem | 2 | 19 | 218 | 105 | 323 | 75 | 4,200 | 242 | 111 | 43 | 29 | 41 | 26 |
| | SOUTH CAROLINA | | | | | | | | | | | | | |
| 30-4817 | Anderson | 2 | 8 | 53 | 17 | 70 | 14 | 644 | 36 | 16 | 1 | 1 | 4 | 2 |
| 31-5106 | Charleston | 3 | 129 | 127 | 70 | 196 | 62 | 4,680 | 172 | 101 | 46 | 40 | 25 | 21 |
| 30-5006 | Columbia | 3 | 62 | 166 | 81 | 247 | 52 | 4,219 | 247 | 205 | 38 | 27 | 38 | 25 |
| 30-5116 | Florence | 2 | 100 | 178 | 43 | 221 | 15 | 3,705 | 280 | 6 | 17 | 3 | 23 | 5 |
| 31-5231 | Georgetown | 2 | 18 | 53 | 8 | 61 | 5 | 1,986 | 35 | 10 | 5 | 1 | 3 | 1 |
| 29-4816 | Greenville | 2 | 27 | 171 | 52 | 223 | 29 | 2,468 | 248 | 179 | 16 | 8 | 16 | 16 |
| 30-4916 | Greenwood | 4 | 34 | 52 | 19 | 71 | 11 | 1,368 | 85 | 43 | 11 | 8 | 14 | 9 |
| 31-5031 | Orangeburg | 3 | 48 | 95 | 11 | 107 | 9 | 2,024 | 103 | 40 | 7 | 2 | 7 | 3 |
| 29-5016 | Rock Hill | 2 | 16 | 82 | 32 | 113 | 11 | 1,756 | 118 | 52 | 7 | 4 | 13 | 6 |
| 29-4906 | Spartanburg | 3 | 33 | 130 | 49 | 179 | 29 | 1,632 | 170 | 64 | 19 | 1 | 26 | 1 |
| 30-5016 | Sumter | 3 | 37 | 86 | 14 | 100 | 12 | 1,687 | 49 | 11 | 9 | 6 | 13 | 9 |
| TOTAL KENTUCKY, TENNESSEE, NORTH AND SOUTH CAROLINA - | | 3,032 | 7,029 | 2,894 | 9,923 | 2,029 | 158,086 | 11,913 | 6,502 | 1,762 | 799 | 1,430 | 952 | |
| TOTAL SOUTHEASTERN - | | 6,832 | 13,838 | 6,344 | 20,182 | 4,518 | 390,409 | 25,734 | 12,577 | 3,475 | 1,652 | 3,083 | 1,917 | |



SECTION 10. TRADE AREA MARKETS

Analysis 10.9 Freight Traffic of Mississippi, East Louisiana, Alabama, Georgia and Florida Trade Areas - 1932

| NUMBER | TRADE AREA TRADE CENTER | NUMBER OF RAIL-ROADS | NUMBER OF COM-MUN-ITIES | POPULATION TRADE AREA RURAL (000) | POPULATION TRADE AREA URBAN (000) | POPULATION TRADE AREA TOTAL (000) | POPULATION TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | ON TRACK INDUSTRIES TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | CARS ORIGINATED TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | CARS TERMINATED TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MISSISSIPPI | | | | | | | | | | | | | |
| 35-4306 | Biloxi-Gulfport | 1 | 25 | 27 | 36 | 63 | 27 | 1,483 | 70 | 57 | 4 | 3 | 10 | 9 |
| 31-4116 | Clarksdale | 1 | 65 | 88 | 12 | 100 | 10 | 1,290 | 92 | 25 | 14 | 8 | 14 | 10 |
| 31-4316 | Columbus | 3 | 71 | 173 | 26 | 199 | 11 | 5,087 | 217 | 59 | 19 | 8 | 19 | 6 |
| 30-4331 | Corinth | 4 | 29 | 95 | 6 | 102 | 6 | 2,616 | 77 | 56 | 7 | 3 | 7 | 5 |
| 32-4016 | Greenville | 2 | 72 | 97 | 24 | 121 | 15 | 1,561 | 132 | 52 | 15 | 7 | 14 | 9 |
| 31-4117 | Greenwood | 2 | 93 | 209 | 29 | 239 | 11 | 4,289 | 228 | 51 | 20 | 8 | 20 | 11 |
| 31-4216 | Hattiesburg | 5 | 57 | 135 | 44 | 179 | 19 | 5,201 | 332 | 90 | 31 | 9 | 18 | 6 |
| 33-4106 | Jackson | 3 | 123 | 261 | 69 | 330 | 48 | 7,084 | 351 | 99 | 43 | 22 | 39 | 26 |
| 34-4116 | McComb | 3 | 22 | 89 | 17 | 106 | 10 | 2,537 | 94 | 23 | 9 | 2 | 8 | 3 |
| 33-4306 | Meridian | 3 | 37 | 174 | 37 | 211 | 32 | 5,959 | 217 | 153 | 41 | 16 | 24 | 19 |
| 34-4016 | Natchez | 4 | 48 | 100 | 16 | 116 | 13 | 4,231 | 105 | 25 | 9 | 2 | 11 | 3 |
| 30-4332 | Tupelo | 5 | 39 | 176 | 17 | 193 | 6 | 4,579 | 130 | 36 | 13 | 3 | 16 | 6 |
| 33-4116 | Vicksburg | 3 | 71 | 89 | 29 | 118 | 23 | 3,641 | 157 | 42 | 20 | 10 | 21 | 11 |
| | LOUISIANA | | | | | | | | | | | | | |
| 35-4006 | Baton Rouge | 5 | 257 | 247 | 71 | 318 | 31 | 5,767 | 452 | 57 | 69 | 27 | 51 | 16 |
| 35-4101 | New Orleans | 7 | 231 | 250 | 542 | 791 | 459 | 10,054 | 865 | 442 | 167 | 101 | 207 | 105 |
| | ALABAMA | | | | | | | | | | | | | |
| 31-4516 | Anniston | 4 | 50 | 76 | 36 | 112 | 22 | 2,387 | 218 | 163 | 12 | 9 | 15 | 12 |
| 31-4401 | Birmingham | 8 | 259 | 373 | 326 | 699 | 260 | 7,725 | 930 | 411 | 225 | 104 | 126 | 95 |
| 30-4416 | Decatur | 2 | 38 | 99 | 23 | 122 | 16 | 2,161 | 111 | 78 | 8 | 6 | 11 | 7 |
| 34-4616 | Dothan | 3 | 76 | 210 | 42 | 252 | 16 | 6,825 | 169 | 22 | 16 | 3 | 14 | 5 |
| 31-4316 | Florence | 3 | 42 | 123 | 29 | 151 | 12 | 3,669 | 161 | 29 | 12 | 2 | 14 | 3 |
| 31-4517 | Gadsden | 4 | 17 | 106 | 43 | 148 | 24 | 1,761 | 251 | 111 | 15 | 5 | 21 | 8 |
| 30-4417 | Huntsville | 3 | 15 | 82 | 15 | 97 | 12 | 1,632 | 153 | 117 | 7 | 5 | 8 | 7 |
| 34-4306 | Mobile | 5 | 98 | 164 | 83 | 247 | 68 | 7,629 | 357 | 252 | 42 | 28 | 39 | 30 |
| 32-4506 | Montgomery | 6 | 123 | 293 | 96 | 389 | 66 | 8,529 | 555 | 262 | 58 | 40 | 51 | 35 |
| 32-4631 | Opelika | 4 | 12 | 49 | 9 | 58 | 6 | 1,425 | 39 | 22 | 2 | 2 | 4 | 3 |
| 32-4416 | Selma | 4 | 65 | 135 | 24 | 160 | 18 | 4,218 | 186 | 111 | 18 | 10 | 16 | 10 |
| 33-4531 | Troy | 2 | 14 | 31 | 7 | 38 | 7 | 826 | 43 | 17 | 2 | 2 | 2 | 2 |
| 32-4417 | Tuscaloosa | 3 | 39 | 82 | 21 | 103 | 21 | 2,373 | 77 | 43 | 13 | 6 | 11 | 8 |
| | GEORGIA | | | | | | | | | | | | | |
| 33-4716 | Albany | 3 | 29 | 99 | 22 | 121 | 15 | 3,238 | 195 | 50 | 17 | 11 | 12 | 8 |
| 33-4731 | Americus | 3 | 14 | 37 | 12 | 49 | 9 | 888 | 104 | 40 | 9 | 8 | 5 | 4 |
| 30-4816 | Athens | 4 | 34 | 130 | 35 | 165 | 18 | 3,284 | 234 | 78 | 10 | 4 | 20 | 10 |
| 31-4701 | Atlanta | 6 | 142 | 373 | 344 | 718 | 270 | 7,156 | 1,394 | 923 | 119 | 82 | 161 | 117 |
| 33-4906 | Augusta | 4 | 101 | 218 | 82 | 300 | 60 | 7,010 | 442 | 173 | 42 | 18 | 41 | 25 |
| 34-4731 | Bainbridge | 2 | 18 | 34 | 6 | 40 | 6 | 1,076 | 45 | 29 | 7 | 2 | 4 | 3 |
| 33-5016 | Brunswick | 3 | 20 | 30 | 14 | 44 | 14 | 2,095 | 72 | 50 | 11 | 8 | 15 | 12 |
| 32-4606 | Columbus | 3 | 42 | 101 | 61 | 162 | 43 | 3,419 | 274 | 129 | 33 | 27 | 37 | 29 |
| 33-4732 | Cordele | 3 | 19 | 49 | 7 | 56 | 7 | 1,193 | 95 | 71 | 7 | 5 | 7 | 5 |
| 32-4831 | Dublin* | 2 | 13 | 86 | 10 | 95 | 7 | 2,353 | 29 | - | 2 | - | 3 | - |
| 33-4831 | Fitzgerald | 3 | 28 | 42 | 10 | 51 | 6 | 1,115 | 71 | 29 | 6 | 3 | 10 | 4 |
| 30-4731 | Gainesville | 1 | 17 | 121 | 17 | 138 | 9 | 3,401 | 49 | 15 | 5 | 2 | 11 | 2 |
| 31-4716 | Griffin | 2 | 11 | 34 | 14 | 47 | 10 | 653 | 80 | 43 | 5 | 4 | 7 | 5 |
| 32-4616 | La Grange | 3 | 34 | 70 | 41 | 111 | 20 | 1,702 | 104 | 37 | 10 | 5 | 12 | 6 |
| 32-4706 | Macon | 3 | 56 | 189 | 82 | 270 | 54 | 6,088 | 535 | 196 | 59 | 35 | 48 | 30 |
| 30-4616 | Rome | 3 | 21 | 63 | 46 | 109 | 22 | 1,678 | 195 | 113 | 19 | 8 | 22 | 12 |
| 32-5006 | Savannah | 5 | 106 | 208 | 98 | 305 | 85 | 7,278 | 346 | 170 | 62 | 34 | 58 | 33 |
| 34-4716 | Thomasville | 4 | 38 | 85 | 26 | 111 | 12 | 2,257 | 83 | 11 | 9 | 5 | 12 | 6 |
| 34-4816 | Valdosta | 3 | 47 | 77 | 19 | 96 | 13 | 3,354 | 151 | 68 | 13 | 7 | 11 | 6 |
| 33-4916 | Waycross | 3 | 86 | 84 | 22 | 106 | 16 | 3,889 | 114 | 11 | 9 | 3 | 12 | 3 |
| | FLORIDA | | | | | | | | | | | | | |
| 35-5116 | Daytona Beach | 2 | 28 | 29 | 29 | 57 | 17 | 2,394 | 86 | 22 | 4 | # | 6 | 2 |
| 35-4916 | Gainesville | 2 | 63 | 45 | 10 | 56 | 10 | 2,885 | 49 | 13 | 14 | 1 | 6 | 2 |
| 34-5001 | Jacksonville | 4 | 107 | 109 | 164 | 273 | 130 | 7,507 | 544 | 374 | 101 | 88 | 106 | 92 |
| 31-5016 | Key West | 1 | 3 | 1 | 13 | 14 | 13 | 1,100 | 9 | 3 | 3 | 3 | 3 | 3 |
| 32-5201 | Miami | 2 | 17 | 21 | 142 | 163 | 111 | 3,231 | 187 | 84 | 11 | 4 | 17 | 11 |
| 36-4931 | Ocala | 2 | 71 | 34 | 7 | 42 | 7 | 2,730 | 99 | 23 | 19 | 4 | 6 | 2 |
| 36-5006 | Orlando | 3 | 118 | 51 | 51 | 102 | 27 | 3,653 | 180 | 40 | 17 | 1 | 13 | 3 |
| 35-4406 | Pensacola | 2 | 60 | 75 | 37 | 112 | 32 | 4,499 | 144 | 83 | 20 | 9 | 28 | 23 |
| 37-4906 | St. Petersburg | 2 | 10 | 9 | 48 | 57 | 40 | 176 | 97 | 47 | 3 | 1 | 7 | 5 |
| 34-4717 | Tallahassee | 2 | 68 | 85 | 26 | 111 | 11 | 6,294 | 121 | 52 | 13 | 3 | 16 | 5 |
| 37-4901 | Tampa | 2 | 276 | 151 | 191 | 342 | 101 | 13,796 | 771 | 442 | 135 | 18 | 112 | 23 |
| 38-5206 | W. Palm Beach | 2 | 15 | 36 | 39 | 75 | 27 | 4,362 | 153 | 51 | 11 | 2 | 13 | 5 |
| TOTAL MISSISSIPPI, EAST LOUISIANA, ALABAMA, GEORGIA AND FLORIDA - | | 3,800 | 6,809 | 3,450 | 10,259 | 2,489 | 232,323 | 13,821 | 6,075 | 1,713 | 853 | 1,653 | 964 | |

* Originated and Terminated Cars and Industries of Trade Center not reported - not served by Class I Railroads.
\# Less than 500.

SECTION 10. TRADE AREA MARKETS

Analysis 10.10 Freight Traffic of Minnesota, Iowa, North Missouri, Wisconsin and Michigan Trade Areas - 1932

| TRADE AREA NUMBER | TRADE CENTER | NUMBER OF COM- RAIL- ROADS | MUN- ITIES | POPULATION TRADE AREA RURAL (000) | URBAN (000) | TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MINNESOTA | | | | | | | | | | | | | |
| 20-3816 | Albert Lea | 6 | 41 | 46 | 22 | 69 | 10 | 1,749 | 242 | 36 | 23 | 5 | 36 | 7 |
| 17-3716 | Brainerd | 2 | 15 | 29 | 19 | 48 | 10 | 2,224 | 128 | 36 | 2 | 1 | 6 | 2 |
| 16-3901 | Duluth | 6 | 205 | 151 | 163 | 314 | 101 | 23,953 | 780 | 361 | 161 | 136 | 123 | 91 |
| 17-3631 | Fergus Falls | 3 | 17 | 50 | 9 | 59 | 9 | 2,984 | 152 | 25 | 3 | 1 | 4 | 2 |
| 16-3816 | Hibbing | 2 | 15 | 10 | 29 | 39 | 16 | 1,521 | 49 | 32 | 22 | 15 | 4 | 3 |
| 19-3716 | Mankato | 4 | 74 | 132 | 49 | 180 | 14 | 5,298 | 480 | 52 | 44 | 13 | 30 | 10 |
| 18-3801 | Minneapolis | 8 | 112 | 285 | 545 | 830 | 464 | 10,953 | 1,773 | 1,040 | 178 | 154 | 192 | 157 |
| 19-3916 | Rochester | 3 | 35 | 50 | 21 | 70 | 21 | 1,926 | 209 | 45 | 6 | 2 | 13 | 8 |
| 18-3716 | St. Cloud | 3 | 49 | 130 | 37 | 167 | 21 | 5,611 | 368 | 65 | 15 | 4 | 20 | 7 |
| 18-3802 | St. Paul | 6 | 135 | 201 | 337 | 538 | 272 | 7,268 | 1,008 | 282 | 163 | 116 | 195 | 139 |
| 19-3917 | Winona | 4 | 24 | 27 | 21 | 48 | 21 | 1,227 | 124 | 64 | 15 | 14 | 11 | 8 |
| | IOWA | | | | | | | | | | | | | |
| 23-3731 | Atlantic | 2 | 12 | 24 | 8 | 32 | 6 | 1,007 | 99 | 21 | 5 | 2 | 6 | 3 |
| 23-4006 | Burlington | 4 | 48 | 40 | 30 | 71 | 27 | 1,507 | 285 | 103 | 24 | 18 | 27 | 21 |
| 22-3906 | Cedar Rapids | 4 | 75 | 82 | 75 | 157 | 56 | 3,293 | 489 | 173 | 73 | 60 | 72 | 57 |
| 23-3831 | Centerville | 3 | 32 | 29 | 10 | 39 | 8 | 1,037 | 101 | 26 | 14 | 5 | 7 | 4 |
| 22-4106 | Clinton | 4 | 68 | 58 | 54 | 112 | 26 | 2,071 | 314 | 405 | 33 | 15 | 37 | 17 |
| 23-3732 | Creston | 1 | 25 | 26 | 11 | 36 | 9 | 1,096 | 126 | 33 | 8 | 6 | 10 | 7 |
| 22-4006 | Davenport | 4 | 58 | 59 | 150 | 208 | 61 | 1,865 | 513 | 276 | 67 | 44 | 70 | 48 |
| 22-3801 | Des Moines | 7 | 214 | 246 | 228 | 473 | 143 | 8,758 | 1,093 | 155 | 131 | 54 | 109 | 57 |
| 21-4006 | Dubuque | 5 | 93 | 106 | 55 | 161 | 42 | 3,815 | 447 | 141 | 31 | 18 | 36 | 21 |
| 21-3716 | Fort Dodge | 6 | 121 | 127 | 47 | 174 | 22 | 5,243 | 711 | 62 | 41 | 6 | 30 | 8 |
| 22-3917 | Iowa City | 1 | 19 | 23 | 15 | 38 | 15 | 921 | 97 | 38 | 6 | 3 | 8 | 6 |
| 21-4016 | Keokuk | 4 | 69 | 56 | 29 | 85 | 15 | 2,167 | 289 | 64 | 15 | 6 | 20 | 8 |
| 22-3817 | Marshalltown | 5 | 58 | 50 | 27 | 77 | 17 | 1,773 | 352 | 108 | 20 | 4 | 23 | 6 |
| 20-3816 | Mason City | 4 | 110 | 128 | 53 | 181 | 23 | 5,237 | 631 | 108 | 44 | 25 | 40 | 20 |
| 22-4016 | Muscatine | 4 | 39 | 35 | 22 | 56 | 17 | 1,227 | 154 | 55 | 18 | 11 | 16 | 8 |
| 23-3916 | Oskaloosa | 6 | 27 | 24 | 10 | 35 | 10 | 828 | 108 | 58 | 4 | 2 | 4 | 2 |
| 23-3907 | Ottumwa | 6 | 66 | 56 | 44 | 100 | 28 | 2,405 | 294 | 99 | 31 | 19 | 32 | 23 |
| 21-3506 | Sioux City | 6 | 142 | 242 | 125 | 367 | 79 | 9,680 | 1,152 | 186 | 72 | 39 | 72 | 43 |
| 21-3906 | Waterloo | 5 | 65 | 89 | 71 | 159 | 46 | 3,053 | 423 | 103 | 28 | 16 | 39 | 24 |
| | MISSOURI | | | | | | | | | | | | | |
| 24-3831 | Chillicothe | 4 | 55 | 60 | 22 | 81 | 8 | 2,644 | 198 | 46 | 7 | 1 | 8 | 2 |
| 25-3916 | Columbia | 5 | 31 | 27 | 26 | 52 | 15 | 1,432 | 87 | 30 | 6 | 1 | 9 | 3 |
| 24-4016 | Hannibal | 3 | 69 | 71 | 26 | 98 | 23 | 2,707 | 156 | 72 | 16 | 7 | 16 | 9 |
| 26-3916 | Jefferson City | 5 | 42 | 77 | 35 | 111 | 22 | 3,821 | 134 | 33 | 7 | 3 | 17 | 8 |
| 25-3701 | Kansas City | 12 | 189 | 244 | 578 | 822 | 522 | 6,563 | 1,334 | 914 | 427 | 369 | 386 | 335 |
| 24-3931 | Kirksville | 4 | 45 | 45 | 8 | 53 | 8 | 2,046 | 118 | 41 | 4 | 1 | 7 | 2 |
| 25-3917 | Moberly | 5 | 50 | 67 | 24 | 91 | 14 | 2,947 | 203 | 44 | 13 | 5 | 18 | 8 |
| 24-3706 | St. Joseph | 5 | 207 | 217 | 103 | 320 | 81 | 8,208 | 824 | 199 | 49 | 37 | 61 | 34 |
| 26-3816 | Sedalia | 6 | 82 | 115 | 50 | 164 | 21 | 5,235 | 258 | 54 | 26 | 4 | 25 | 5 |
| | St. Louis Multiple Market | - | 450 | 584 | 1,251 | 1,836 | 822 | 16,100 | 3,191 | 1,255 | 625 | 278 | 625 | 389 |
| | MISSOURI | | | | | | | | | | | | | |
| 26-4101 | St. Louis | 10 | 151 | 154 | 866 | 1,020 | 822 | 7,389 | 1,582 | 1,255 | 317 | 278 | 422 | 389 |
| 26-4116 | Webster Groves | 6 | 41 | 140 | 96 | 236 | 16 | 1,022 | 83 | 3 | 13 | # | 8 | # |
| | ILLINOIS | | | | | | | | | | | | | |
| 26-4107 | Alton | 5 | 34 | 40 | 47 | 87 | 30 | 980 | 178 | 116 | 78 | 76 | 38 | 35 |
| 26-4106 | E. St. Louis | 16 | 224 | 250 | 242 | 493 | 74 | 6,709 | 1,348 | 139 | 217 | 106 | 158 | 98 |
| | WISCONSIN | | | | | | | | | | | | | |
| 16-4016 | Ashland | 4 | 46 | 46 | 16 | 62 | 12 | 5,184 | 131 | 49 | 19 | 11 | 14 | 10 |
| 19-3906 | Eau Claire | 3 | 47 | 114 | 41 | 155 | 26 | 5,200 | 355 | 102 | 21 | 14 | 24 | 16 |
| 20-4006 | La Crosse | 4 | 94 | 147 | 59 | 206 | 40 | 6,092 | 561 | 129 | 30 | 17 | 38 | 20 |
| 18-4216 | Marinette-Menominee | 3 | 24 | 24 | 29 | 53 | 24 | 1,606 | 160 | 34 | 15 | 4 | 14 | 3 |
| 19-4116 | Stevens Point | 3 | 29 | 53 | 25 | 78 | 14 | 2,148 | 215 | 41 | 21 | 12 | 27 | 14 |
| 16-3906 | Superior | 7 | 36 | 26 | 39 | 64 | 36 | 2,731 | 76 | 34 | 60 | 47 | 47 | 28 |
| 18-4116 | Wausau | 3 | 136 | 124 | 63 | 187 | 24 | 6,534 | 690 | 120 | 44 | 11 | 53 | 11 |
| | MICHIGAN | | | | | | | | | | | | | |
| 16-4216 | Calumet-Laurium* | 2 | 54 | 45 | 29 | 73 | 16 | 3,156 | 61 | - | 6 | - | 5 | - |
| 17-4316 | Escanaba | 5 | 45 | 24 | 25 | 49 | 15 | 3,010 | 76 | 16 | 12 | 4 | 14 | 4 |
| 17-4216 | Iron Mountain | 3 | 36 | 31 | 31 | 62 | 12 | 3,344 | 200 | 46 | 18 | 3 | 15 | 7 |
| 17-4016 | Ironwood | 4 | 49 | 28 | 25 | 54 | 14 | 3,526 | 227 | 75 | 19 | 1 | 12 | 5 |
| 16-4316 | Marquette | 5 | 45 | 19 | 35 | 53 | 15 | 2,790 | 185 | 44 | 25 | 22 | 25 | 14 |
| 16-4516 | Sault Ste. Marie | 2 | 53 | 24 | 16 | 40 | 14 | 3,537 | 81 | 16 | 12 | 4 | 10 | 5 |
| | TOTAL MINNESOTA, IOWA, NORTH MISSOURI, WISCONSIN AND MICHIGAN | - | 3,977 | 4,823 | 4,869 | 9,692 | 3,524 | 222,258 | 22,512 | 7,904 | 2,779 | 1,848 | 2,763 | 1,884 |

* Originating and Terminating Cars and Industries of Trade Center not reported - not served by Class I Railroad

# Less than 500.



SECTION 10. TRADE AREA MARKETS

Analysis 10.11 Freight Traffic of North Dakota, Wyoming, South Dakota, Nebraska, Colorado and Kansas Trade Areas - 1932

| TRADE AREA NUMBER | TRADE CENTER | NUMBER OF COM- RAIL- ROADS | MUN- ITIES | POPULATION TRADE AREA RURAL (000) | URBAN (000) | TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NORTH DAKOTA | | | | | | | | | | | | | |
| 16-3216 | Bismarck | 3 | 45 | 54 | 11 | 65 | 11 | 7,596 | 253 | 48 | 10 | 4 | 12 | 7 |
| 15-3431 | Devils Lake | 3 | 37 | 53 | 5 | 59 | 5 | 5,505 | 171 | 31 | 3 | 2 | 6 | 4 |
| 16-3031 | Dickinson | 2 | 25 | 32 | 5 | 37 | 5 | 6,995 | 140 | 18 | 6 | 2 | 5 | 3 |
| 16-3506 | Fargo | 4 | 96 | 144 | 45 | 190 | 29 | 11,041 | 725 | 141 | 39 | 19 | 43 | 17 |
| 15-3516 | Grand Forks | 3 | 86 | 153 | 34 | 186 | 17 | 14,692 | 457 | 78 | 26 | 13 | 30 | 16 |
| 16-3431 | Jamestown | 4 | 47 | 53 | 10 | 64 | 8 | 6,017 | 275 | 24 | 9 | 3 | 11 | 5 |
| 16-3238 | Mandan | 3 | 49 | 58 | 5 | 63 | 5 | 8,701 | 216 | 15 | 29 | 8 | 10 | 7 |
| 15-3216 | Minot | 2 | 77 | 106 | 16 | 122 | 16 | 12,969 | 497 | 90 | 25 | 4 | 15 | 7 |
| 16-3442 | Valley City | 3 | 22 | 20 | 5 | 26 | 5 | 2,227 | 127 | 30 | 5 | 2 | 6 | 4 |
| 14-3031 | Williston | 3 | 40 | 82 | 10 | 91 | 5 | 18,088 | 191 | 22 | 6 | # | 8 | 1 |
| | WYOMING | | | | | | | | | | | | | |
| 22-2816 | Cheyenne | 2 | 83 | 27 | 21 | 48 | 17 | 6,989 | 269 | 111 | 35 | 22 | 33 | 21 |
| | SOUTH DAKOTA | | | | | | | | | | | | | |
| 18-3416 | Aberdeen | 5 | 139 | 127 | 23 | 149 | 16 | 20,523 | 720 | 74 | 39 | 17 | 33 | 13 |
| 19-3531 | Brookings | 3 | 16 | 27 | 4 | 31 | 4 | 1,530 | 110 | 35 | 2 | # | 4 | 2 |
| 19-2938 | Deadwood | 2 | 44 | 23 | 8 | 31 | 3 | 8,634 | 493 | 31 | 5 | 1 | 10 | 3 |
| 19-3416 | Huron | 3 | 25 | 44 | 11 | 55 | 11 | 4,393 | 211 | 29 | 9 | 6 | 12 | 7 |
| 20-3416 | Mitchell | 2 | 38 | 82 | 11 | 93 | 11 | 7,621 | 297 | 35 | 9 | 3 | 18 | 6 |
| 19-3231 | Pierre | 2 | 30 | 50 | 4 | 53 | 4 | 14,663 | 168 | 21 | 7 | 1 | 9 | 3 |
| 19-3016 | Rapid City | 3 | 50 | 43 | 13 | 56 | 10 | 12,906 | 140 | 50 | 9 | 5 | 11 | 6 |
| 20-3506 | Sioux Falls | 5 | 112 | 183 | 58 | 241 | 33 | 9,195 | 825 | 180 | 41 | 24 | 58 | 24 |
| 18-3516 | Watertown | 5 | 57 | 89 | 15 | 103 | 10 | 6,172 | 428 | 72 | 12 | 4 | 13 | 5 |
| 21-3571 | Yanktown | 2 | 14 | 22 | 6 | 28 | 6 | 1,096 | 92 | 29 | 1 | 1 | 4 | 2 |
| | NEBRASKA | | | | | | | | | | | | | |
| 24-3516 | Beatrice | 3 | 75 | 56 | 23 | 79 | 10 | 2,700 | 349 | 67 | 17 | 4 | 15 | 4 |
| 22-3439 | Columbus | 3 | 54 | 60 | 14 | 74 | 7 | 3,560 | 274 | 62 | 10 | 3 | 12 | 5 |
| 22-3516 | Fremont | 3 | 21 | 32 | 11 | 43 | 11 | 1,335 | 136 | 58 | 11 | 9 | 10 | 7 |
| 23-3416 | Grand Island | 2 | 97 | 85 | 28 | 113 | 18 | 8,152 | 461 | 95 | 30 | 14 | 32 | 17 |
| 23-3417 | Hastings | 4 | 162 | 148 | 28 | 177 | 15 | 12,933 | 772 | 95 | 40 | 9 | 30 | 11 |
| 23-3331 | Kearney | 2 | 46 | 39 | 14 | 53 | 9 | 3,021 | 198 | 47 | 17 | 3 | 12 | 6 |
| 23-3506 | Lincoln | 5 | 86 | 89 | 91 | 180 | 76 | 5,792 | 606 | 227 | 38 | 25 | 44 | 32 |
| 23-3631 | Nebraska City | 2 | 28 | 19 | 10 | 29 | 7 | 874 | 78 | 31 | 7 | 5 | 7 | 5 |
| 22-3416 | Norfolk | 2 | 53 | 116 | 11 | 127 | 11 | 11,706 | 361 | 99 | 13 | 3 | 16 | 6 |
| 23-3216 | North Platte | 2 | 38 | 29 | 12 | 41 | 12 | 6,075 | 117 | 34 | 9 | 4 | 8 | 7 |
| 23-3601 | Omaha | 10 | 206 | 218 | 300 | 518 | 214 | 7,833 | 1,921 | 1,098 | 173 | 132 | 172 | 139 |
| 22-2931 | Scotts Bluff | 4 | 158 | 84 | 26 | 109 | 8 | 19,550 | 470 | 25 | 43 | 2 | 39 | 5 |
| | COLORADO | | | | | | | | | | | | | |
| 25-2806 | Colorado Springs | 4 | 23 | 20 | 33 | 54 | 33 | 2,668 | 120 | 88 | 5 | 4 | 6 | 5 |
| 24-2801 | Denver | 6 | 295 | 202 | 323 | 525 | 288 | 42,176 | 2,035 | 1,012 | 120 | 55 | 118 | 77 |
| 23-2817 | Fort Collins | 2 | 34 | 16 | 17 | 33 | 11 | 1,840 | 134 | 78 | 10 | 6 | 11 | 9 |
| 23-2816 | Greeley | 3 | 36 | 38 | 12 | 50 | 12 | 2,413 | 254 | 53 | 28 | 3 | 12 | 6 |
| 26-2806 | Pueblo | 4 | 153 | 128 | 94 | 222 | 50 | 24,958 | 991 | 119 | 59 | 8 | 42 | 14 |
| 27-2816 | Trinidad | 3 | 46 | 24 | 12 | 36 | 12 | 4,809 | 82 | 54 | 6 | 1 | 3 | 2 |
| | KANSAS | | | | | | | | | | | | | |
| 27-3516 | Arkansas City | 4 | 43 | 33 | 23 | 56 | 14 | 1,878 | 166 | 36 | 37 | 27 | 15 | 8 |
| 25-3616 | Atchison | 3 | 15 | 11 | 13 | 24 | 13 | 412 | 95 | 90 | 21 | 21 | 13 | 12 |
| 27-3616 | Chanute | 3 | 13 | 12 | 10 | 22 | 10 | 522 | 50 | 32 | 8 | 7 | 12 | 11 |
| 27-3617 | Coffeyville | 4 | 41 | 43 | 44 | 86 | 16 | 2,518 | 192 | 61 | 58 | 40 | 20 | 10 |
| 27-3216 | Dodge City | 4 | 127 | 106 | 21 | 128 | 10 | 19,844 | 678 | 75 | 45 | 8 | 30 | 8 |
| 26-3516 | Emporia | 3 | 57 | 43 | 19 | 63 | 14 | 3,012 | 154 | 39 | 15 | 6 | 17 | 7 |
| 27-3716 | Fort Scott | 4 | 36 | 46 | 18 | 64 | 11 | 2,211 | 150 | 44 | 23 | 3 | 11 | 4 |
| 26-3406 | Hutchinson | 3 | 107 | 92 | 55 | 146 | 27 | 7,200 | 627 | 103 | 65 | 25 | 42 | 18 |
| 27-3616 | Independence | See Coffeyville | | | | | | | | | | | | |
| 26-3631 | Iola | 3 | 28 | 22 | 12 | 34 | 7 | 1,242 | 69 | 30 | 9 | 2 | 6 | 3 |
| 25-3617 | Lawrence | 2 | 16 | 14 | 14 | 28 | 14 | 535 | 70 | 47 | 5 | 5 | 5 | 5 |
| 25-3716 | Leavenworth | 4 | 29 | 17 | 26 | 43 | 17 | 553 | 79 | 56 | 6 | 5 | 10 | 9 |
| 25-3516 | Manhattan | 3 | 61 | 55 | 25 | 80 | 10 | 3,266 | 236 | 41 | 13 | 2 | 12 | 2 |
| 26-3632 | Ottawa | 3 | 22 | 19 | 12 | 32 | 10 | 931 | 43 | 20 | 4 | 2 | 5 | 4 |
| 27-3619 | Parsons | 2 | 19 | 22 | 15 | 37 | 15 | 875 | 104 | 68 | 9 | 7 | 11 | 7 |
| 27-3717 | Pittsburg | 4 | 47 | 42 | 30 | 71 | 18 | 1,327 | 192 | 73 | 45 | 26 | 10 | 7 |
| 25-3416 | Salina | 5 | 217 | 230 | 56 | 286 | 20 | 19,341 | 1,060 | 94 | 94 | 22 | 62 | 18 |
| 25-3606 | Topeka | 5 | 84 | 86 | 69 | 155 | 64 | 3,819 | 404 | 211 | 32 | 24 | 35 | 27 |
| 27-3401 | Wichita | 5 | 179 | 136 | 155 | 292 | 111 | 10,090 | 1,005 | 381 | 172 | 94 | 108 | 72 |
| | TOTAL NORTH DAKOTA, WYOMING, SOUTH DAKOTA, NEBRASKA, COLORADO AND KANSAS | - | 3,884 | 3,904 | 1,998 | 5,902 | 1,441 | 427,818 | 20,778 | 5,967 | 1,626 | 756 | 1,356 | 750 |
| | TOTAL WESTERN TRUNK LINE | - | 7,861 | 8,727 | 6,867 | 15,594 | 4,965 | 650,076 | 43,290 | 13,871 | 4,405 | 2,604 | 4,119 | 2,634 |

# Less than 500.

## SECTION 10. TRADE AREA MARKETS

Analysis 10.12 Freight Traffic of Missouri, Arkansas and Oklahoma Trade Areas - 1932

| NUMBER | TRADE AREA CENTER | NUMBER OF COM- RAIL- ROADS | MUN- ITIES | POPULATION TRADE AREA RURAL (000) | URBAN (000) | TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MISSOURI | | | | | | | | | | | | | |
| 27-4216 | Cape Girardeau | 6 | 84 | 94 | 28 | 121 | 16 | 4,494 | 162 | 42 | 12 | 6 | 15 | 7 |
| 27-3731 | Carthage | 2 | 13 | 22 | 10 | 32 | 10 | 771 | 73 | 41 | 7 | 5 | 6 | 5 |
| 27-3706 | Joplin | 6 | 57 | 102 | 68 | 170 | 33 | 4,149 | 337 | 104 | 20 | 9 | 22 | 13 |
| 27-3806 | Springfield | 2 | 129 | 336 | 75 | 411 | 58 | 17,272 | 549 | 166 | 29 | 19 | 46 | 21 |
| | ARKANSAS | | | | | | | | | | | | | |
| 29-4031 | Batesville | 1 | 9 | 42 | 4 | 47 | 4 | 46,649 | 19 | 11 | 3 | 2 | 3 | 3 |
| 32-3916 | El Dorado | 2 | 37 | 58 | 27 | 86 | 16 | 1,781 | 177 | 71 | 28 | 11 | 12 | 5 |
| 29-3731 | Fayetteville | 2 | 54 | 89 | 18 | 108 | 7 | 3,544 | 182 | 36 | 5 | 2 | 9 | 4 |
| 29-3706 | Fort Smith | 6 | 91 | 184 | 51 | 234 | 31 | 7,722 | 408 | 156 | 38 | 11 | 18 | 12 |
| 30-4131 | Helena | 4 | 16 | 45 | 15 | 59 | 8 | 1,314 | 105 | 83 | 10 | 6 | 14 | 12 |
| 31-3831 | Hope ~ | 3 | 12 | 57 | 12 | 69 | 6 | 1,949 | 34 | 23 | 5 | 3 | 6 | 4 |
| 30-3816 | Hot Springs | 2 | 6 | 33 | 20 | 53 | 20 | 1,822 | 48 | 44 | 3 | 1 | 4 | 4 |
| 29-4116 | Jonesboro | 4 | 58 | 107 | 20 | 127 | 10 | 3,293 | 201 | 52 | 11 | 1 | 12 | 5 |
| 30-3901 | Little Rock | 4 | 126 | 227 | 133 | 360 | 101 | 8,535 | 528 | 251 | 57 | 32 | 51 | 36 |
| 29-4131 | Paragould | 3 | 85 | 133 | 17 | 150 | 6 | 2,527 | 259 | 24 | 12 | 2 | 20 | 2 |
| 31-3916 | Pine Bluff | 3 | 67 | 190 | 39 | 229 | 21 | 7,266 | 191 | 82 | 26 | 7 | 21 | 8 |
| 29-3831 | Russellville | 2 | 20 | 59 | 9 | 68 | 6 | 2,535 | 51 | 8 | 5 | 2 | 3 | 2 |
| 29-4032 | Searcy | 3 | 21 | 65 | 3 | 69 | 3 | 2,670 | 53 | 18 | 2 | # | 2 | 1 |
| 32-3706 | Texarkana | 5 | 49 | 164 | 42 | 206 | 27 | 6,443 | 215 | 88 | 33 | 19 | 23 | 18 |
| | OKLAHOMA | | | | | | | | | | | | | |
| 30-3516 | Ada | 4 | 21 | 31 | 13 | 44 | 11 | 1,253 | 69 | 42 | 14 | 8 | 9 | 7 |
| 30-3231 | Altus | 3 | 55 | 122 | 38 | 160 | 8 | 5,724 | 295 | 39 | 24 | 4 | 19 | 5 |
| 31-3516 | Ardmore | 3 | 36 | 63 | 25 | 88 | 16 | 2,846 | 138 | 47 | 20 | 11 | 12 | 7 |
| 28-3616 | Bartlesville | 3 | 8 | 11 | 20 | 31 | 15 | 287 | 67 | 43 | 6 | 3 | 7 | 4 |
| 30-3416 | Chickasha | 3 | 29 | 76 | 19 | 95 | 14 | 2,272 | 173 | 82 | 13 | 6 | 15 | 13 |
| 29-3431 | El Reno | 4 | 74 | 109 | 25 | 134 | 9 | 5,713 | 360 | 24 | 24 | 4 | 19 | 5 |
| 28-3406 | Enid | 4 | 95 | 118 | 39 | 157 | 26 | 9,854 | 564 | 124 | 55 | 35 | 34 | 23 |
| 29-3432 | Guthrie | 4 | 31 | 38 | 21 | 59 | 10 | 1,145 | 121 | 25 | 4 | 1 | 5 | 1 |
| 30-3316 | Lawton | 2 | 23 | 54 | 29 | 83 | 12 | 2,623 | 119 | 42 | 13 | 1 | 8 | 3 |
| 30-3616 | Mc Alester | 4 | 35 | 59 | 15 | 75 | 12 | 2,931 | 97 | 53 | 13 | 7 | 12 | 7 |
| 28-3731 | Miami | 2 | 7 | 12 | 11 | 22 | 8 | 334 | 38 | 30 | 1 | # | 2 | 2 |
| 29-3606 | Muskogee | 4 | 32 | 84 | 42 | 126 | 32 | 2,689 | 191 | 115 | 19 | 12 | 14 | 11 |
| 29-3401 | Oklahoma City | 4 | 60 | 129 | 218 | 347 | 185 | 3,749 | 752 | 545 | 103 | 71 | 67 | 52 |
| 29-3616 | Okmulgee | 3 | 29 | 57 | 29 | 86 | 17 | 1,320 | 124 | 47 | 18 | 9 | 8 | 3 |
| 28-3516 | Ponca City | 3 | 38 | 28 | 31 | 59 | 16 | 1,756 | 110 | 29 | 43 | 26 | 14 | 9 |
| 29-3516 | Shawnee | 5 | 33 | 105 | 61 | 166 | 23 | 1,742 | 232 | 73 | 24 | 3 | 8 | 3 |
| 28-3601 | Tulsa | 5 | 102 | 183 | 198 | 381 | 141 | 6,638 | 618 | 266 | 91 | 36 | 53 | 28 |
| | TOTAL MISSOURI, ARKANSAS AND OKLAHOMA | - | 1,642 | 3,286 | 1,423 | 4,709 | 943 | 177,912 | 7,660 | 2,926 | 790 | 377 | 592 | 345 |

# Less than 500.



## SECTION 10. TRADE AREA MARKETS

Analysis 10.13 Freight Traffic of Texas, West Louisiana and New Mexico Trade Areas - 1932

| NUMBER | TRADE AREA CENTER | NUMBER OF COM- RAIL- ROADS | MUN- ITIES | POPULATION TRADE AREA RURAL (000) | URBAN (000) | TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES TRADE AREA | TRADE CENTER | CARS ORIGINATED TRADE AREA (000) | TRADE CENTER (000) | CARS TERMINATED TRADE AREA (000) | TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TEXAS | | | | | | | | | | | | | |
| 33-3216 | Abilene | 3 | 60 | 117 | 53 | 170 | 23 | 9,818 | 293 | 77 | 42 | 6 | 26 | 7 |
| 29-3006 | Amarillo | 3 | 222 | 142 | 94 | 236 | 43 | 34,560 | 773 | 126 | 87 | 24 | 48 | 20 |
| 35-3406 | Austin | 3 | 64 | 108 | 67 | 175 | 53 | 5,507 | 274 | 92 | 23 | 5 | 30 | 14 |
| 35-3706 | Beaumont | 4 | 101 | 73 | 130 | 204 | 58 | 4,920 | 273 | 139 | 54 | 24 | 59 | 27 |
| 33-3016 | Big Spring | 1 | 13 | 38 | 29 | 67 | 14 | 10,187 | 99 | 32 | 13 | 9 | 10 | 4 |
| 35-3537 | Brenham | 1 | 18 | 44 | 6 | 50 | 6 | 1,654 | 77 | 22 | 4 | 1 | 5 | 4 |
| 40-3416 | Brownsville | 2 | 102 | 89 | 87 | 176 | 22 | 4,317 | 268 | 54 | 27 | 1 | 23 | 4 |
| 34-3316 | Brownwood | 4 | 28 | 63 | 28 | 91 | 13 | 5,605 | 120 | 39 | 11 | 2 | 8 | 3 |
| 35-3531 | Bryan | 2 | 60 | 45 | 11 | 56 | 8 | 1,708 | 56 | 7 | 9 | 1 | 12 | 5 |
| 33-3416 | Cleburne | 4 | 18 | 42 | 12 | 53 | 12 | 1,604 | 54 | 18 | 3 | 2 | 4 | 2 |
| 38-3406 | Corpus Christi | 3 | 78 | 93 | 54 | 146 | 28 | 9,132 | 338 | 97 | 29 | 7 | 31 | 10 |
| 33-3516 | Corsicana | 3 | 22 | 64 | 19 | 83 | 15 | 1,942 | 81 | 51 | 14 | 12 | 9 | 7 |
| 32-3501 | Dallas | 3 | 109 | 246 | 321 | 567 | 260 | 6,329 | 1,065 | 641 | 136 | 105 | 96 | 69 |
| 31-3517 | Denison | 5 | 18 | 47 | 21 | 68 | 14 | 1,793 | 80 | 32 | 7 | 3 | 8 | 5 |
| 33-2501 | El Paso | 3 | 144 | 112 | 128 | 241 | 102 | 57,699 | 535 | 312 | 29 | 13 | 31 | 17 |
| 32-3401 | Fort Worth | 5 | 78 | 149 | 214 | 363 | 163 | 9,555 | 540 | 284 | 100 | 81 | 71 | 56 |
| 36-3706 | Galveston | 5 | 17 | 8 | 56 | 64 | 53 | 395 | 67 | 56 | 12 | 10 | 46 | 34 |
| 32-3516 | Greenville | 1 | 22 | 72 | 22 | 94 | 12 | 2,196 | 157 | 70 | 9 | 4 | 14 | 8 |
| 36-3601 | Houston | 3 | 255 | 347 | 340 | 688 | 292 | 17,562 | 992 | 512 | 171 | 100 | 245 | 174 |
| 38-3206 | Laredo | 2 | 17 | 17 | 33 | 50 | 33 | 5,399 | 118 | 88 | 10 | 8 | 9 | 8 |
| 31-3016 | Lubbock | 2 | 75 | 106 | 39 | 145 | 21 | 11,056 | 312 | 83 | 31 | 9 | 23 | 11 |
| 33-3716 | Marshall | 3 | 26 | 124 | 26 | 151 | 16 | 3,624 | 214 | 48 | 30 | 6 | 33 | 8 |
| 34-3616 | Palestine | 4 | 57 | 101 | 26 | 128 | 11 | 4,319 | 90 | 35 | 6 | 13 | 22 | 8 |
| 31-3616 | Paris | 3 | 53 | 145 | 34 | 179 | 16 | 5,814 | 173 | 44 | 14 | 2 | 15 | 4 |
| 34-3106 | San Angelo | 1 | 44 | 63 | 35 | 98 | 25 | 16,513 | 208 | 65 | 21 | 4 | 17 | 7 |
| 36-3301 | San Antonio | 4 | 259 | 380 | 334 | 714 | 232 | 37,276 | 869 | 328 | 107 | 40 | 98 | 46 |
| 31-3518 | Sherman | 2 | 25 | 59 | 30 | 89 | 16 | 1,938 | 155 | 63 | 25 | 14 | 23 | 13 |
| 34-3451 | Temple | 4 | 32 | 76 | 26 | 103 | 15 | 3,108 | 121 | 51 | 11 | 6 | 13 | 8 |
| 33-3616 | Tyler | 4 | 23 | 70 | 23 | 94 | 17 | 2,120 | 62 | 42 | 21 | 10 | 20 | 9 |
| 34-3406 | Waco | 6 | 65 | 164 | 78 | 242 | 53 | 5,413 | 366 | 123 | 29 | 15 | 29 | 17 |
| 31-3306 | Wichita Falls | 5 | 92 | 178 | 101 | 279 | 44 | 14,654 | 441 | 102 | 62 | 22 | 32 | 12 |
| | LOUISIANA | | | | | | | | | | | | | |
| 34-3916 | Alexandria | 6 | 94 | 169 | 40 | 209 | 23 | 6,438 | 274 | 76 | 43 | 14 | 26 | 14 |
| 35-3816 | Lake Charles | 5 | 96 | 126 | 49 | 175 | 16 | 7,566 | 346 | 52 | 15 | 5 | 28 | 14 |
| 33-3906 | Monroe | 3 | 81 | 137 | 46 | 183 | 26 | 4,726 | 210 | 67 | 36 | 17 | 40 | 14 |
| 33-3806 | Shreveport | 7 | 130 | 323 | 110 | 433 | 77 | 10,756 | 551 | 216 | 104 | 72 | 59 | 35 |
| | NEW MEXICO | | | | | | | | | | | | | |
| 29-2606 | Albuquerque | 1 | 55 | 62 | 27 | 89 | 27 | 20,457 | 114 | 47 | 8 | 7 | 15 | 13 |
| 29-2731 | Las Vegas | 3 | 39 | 32 | 9 | 41 | 9 | 9,775 | 61 | 18 | 2 | 1 | 3 | 2 |
| 27-2879 | Raton | 3 | 52 | 22 | 9 | 30 | 6 | 7,675 | 89 | 19 | 8 | 2 | 5 | 3 |
| 31-2716 | Roswel | 2 | 29 | 24 | 17 | 42 | 11 | 14,665 | 100 | 32 | 9 | 2 | 7 | 3 |
| 28-2616 | Santa Fe | 2 | 26 | 40 | 11 | 51 | 11 | 8,845 | 44 | 25 | 4 | # | 3 | 2 |
| | TOTAL TEXAS, WEST LOUISIANA AND NEW MEXICO | - | 2,799 | 4,321 | 2,796 | 7,117 | 1,895 | 388,624 | 11,060 | 4,285 | 1,376 | 679 | 1,299 | 718 |
| | TOTAL SOUTHWESTERN | - | 4,441 | 7,607 | 4,219 | 11,826 | 2,838 | 566,536 | 18,720 | 7,211 | 2,167 | 1,056 | 1,891 | 1,063 |

# Less than 500.

SECTION 10. TRADE AREA MARKETS

Analysis 10.14 Freight Traffic of Pacific Northwest Trade Areas - 1932

| NUMBER | TRADE AREA / TRADE CENTER | NUMBER OF COMMUNITIES: RAILROADS | COMMUNITIES | POPULATION: TRADE AREA RURAL (000) | TRADE AREA URBAN (000) | TRADE AREA TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES: TRADE AREA | ON TRACK INDUSTRIES: TRADE CENTER | CARS ORIGINATED: TRADE AREA (000) | CARS ORIGINATED: TRADE CENTER (000) | CARS TERMINATED: TRADE AREA (000) | CARS TERMINATED: TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WASHINGTON | | | | | | | | | | | | | |
| 14-1416 | Aberdeen | 3 | 22 | 30 | 41 | 71 | 22 | 2,674 | 235 | 142 | 9 | 3 | 8 | 4 |
| 11-1606 | Bellingham | 3 | 17 | 54 | 44 | 97 | 31 | 4,034 | 117 | 72 | 10 | 7 | 11 | 9 |
| 12-1606 | Everett | 3 | 9 | 51 | 33 | 84 | 31 | 2,272 | 97 | 70 | 11 | 10 | 14 | 13 |
| 13-1516 | Olympia | 4 | 34 | 52 | 28 | 80 | 12 | 3,771 | 157 | 47 | 9 | 2 | 15 | 7 |
| 12-1501 | Seattle | 4 | 44 | 123 | 401 | 524 | 366 | 7,135 | 1,222 | 1,122 | 66 | 49 | 73 | 63 |
| 13-1901 | Spokane | 7 | 118 | 150 | 133 | 284 | 116 | 22,288 | 974 | 287 | 66 | 38 | 53 | 39 |
| 12-1502 | Tacoma | 4 | 36 | 55 | 118 | 173 | 107 | 1,980 | 459 | 342 | 56 | 24 | 52 | 43 |
| 15-1816 | Walla-Walla | 3 | 54 | 23 | 22 | 45 | 16 | 3,969 | 406 | 83 | 13 | 3 | 12 | 4 |
| 13-1716 | Wenatchee | 1 | 1 | 45 | 14 | 60 | 12 | 10,806 | 75 | 75 | 8 | 8 | 3 | 3 |
| 14-1716 | Yakima | 3 | 61 | 71 | 29 | 101 | 22 | 8,793 | 431 | 124 | 41 | 13 | 19 | 11 |
| | OREGON | | | | | | | | | | | | | |
| 13-1416 | Astoria | 2 | 4 | 17 | 12 | 29 | 10 | 1,178 | 43 | 29 | 1 | 1 | 15 | 2 |
| 16-1831 | Baker | 1 | 4 | 13 | 8 | 21 | 8 | 6,989 | 41 | 24 | 3 | 2 | 2 | 2 |
| 16-1531 | Bend | 2 | 4 | 12 | 9 | 20 | 9 | 7,778 | 44 | 24 | 7 | 7 | 3 | 2 |
| 16-1416 | Eugene | 2 | 95 | 76 | 38 | 114 | 19 | 13,721 | 203 | 51 | 17 | 4 | 10 | 5 |
| 18-1416 | Klamath Falls | 2 | 45 | 37 | 16 | 53 | 16 | 19,619 | 138 | 69 | 17 | 8 | 8 | 5 |
| 16-1834 | La Grande | 1 | 9 | 17 | 8 | 25 | 8 | 5,176 | 55 | 25 | 5 | 3 | 3 | 3 |
| 18-1316 | Medford | 1 | 47 | 39 | 23 | 62 | 11 | 8,810 | 107 | 35 | 17 | 3 | 12 | 2 |
| 15-1838 | Pendleton | 2 | 18 | 18 | 7 | 25 | 7 | 4,587 | 93 | 42 | 6 | 4 | 5 | 4 |
| 14-1401 | Portland | 5 | 129 | 196 | 363 | 558 | 302 | 9,844 | 754 | 410 | 104 | 61 | 93 | 67 |
| 15-1406 | Salem | 2 | 85 | 71 | 47 | 117 | 26 | 4,655 | 238 | 71 | 29 | 1 | 24 | 9 |
| 15-1631 | The Dalles | 2 | 19 | 26 | 6 | 32 | 6 | 7,909 | 117 | 21 | 6 | 2 | 3 | 2 |
| | IDAHO | | | | | | | | | | | | | |
| 19-2232 | Blackfoot | 1 | 9 | 19 | 3 | 22 | 3 | 6,692 | 110 | 30 | 9 | 3 | 5 | 3 |
| 18-1916 | Boise | 2 | 41 | 86 | 45 | 132 | 22 | 47,147 | 365 | 89 | 27 | 5 | 23 | 6 |
| 19-2235 | Idaho Falls | 1 | 21 | 39 | 15 | 54 | 9 | 10,364 | 238 | 65 | 20 | 9 | 12 | 6 |
| 15-1931 | Lewiston | 2 | 27 | 46 | 17 | 63 | 9 | 14,414 | 167 | 40 | 10 | 4 | 10 | 7 |
| 19-2216 | Pocatello | 1 | 16 | 36 | 21 | 57 | 16 | 9,698 | 195 | 58 | 25 | 15 | 21 | 14 |
| 19-2031 | Twin Falls | 1 | 27 | 63 | 13 | 76 | 9 | 11,709 | 274 | 61 | 27 | 4 | 18 | 7 |
| 14-2031 | Wallace | 3 | 15 | 11 | 8 | 19 | 4 | 2,597 | 113 | 32 | 6 | 1 | 7 | 3 |
| | MONTANA | | | | | | | | | | | | | |
| 17-2616 | Billings | 4 | 153 | 96 | 35 | 132 | 16 | 46,577 | 611 | 134 | 46 | 11 | 35 | 18 |
| 16-2431 | Bozeman | 2 | 75 | 16 | 13 | 30 | 8 | 11,685 | 186 | 52 | 7 | 3 | 9 | 3 |
| 16-2306 | Butte | 4 | 49 | 36 | 56 | 92 | 40 | 10,281 | 253 | 130 | 16 | 13 | 17 | 14 |
| 17-2231 | Dillon | 1 | 5 | 7 | 2 | 9 | 2 | 7,956 | 24 | 22 | 1 | # | 1 | 1 |
| 14-2406 | Great Falls | 2 | 28 | 41 | 29 | 70 | 29 | 12,581 | 199 | 130 | 13 | 11 | 12 | 11 |
| 13-2531 | Havre | 1 | 1 | 36 | 9 | 44 | 6 | 18,761 | 27 | 27 | 2 | 2 | 4 | 4 |
| 15-2316 | Helena | 2 | 13 | 10 | 12 | 22 | 12 | 5,143 | 56 | 47 | 3 | 3 | 5 | 4 |
| 13-2231 | Kalispell | 1 | 1 | 19 | 9 | 28 | 6 | 9,966 | 12 | 12 | # | # | # | # |
| 15-2567 | Lewistown | 2 | 52 | 31 | 5 | 37 | 5 | 16,742 | 202 | 38 | 7 | 2 | 5 | 3 |
| 15-2216 | Missoula | 3 | 66 | 34 | 15 | 49 | 15 | 10,591 | 205 | 81 | 12 | 5 | 16 | 11 |
| | WYOMING | | | | | | | | | | | | | |
| 20-2716 | Casper | 2 | 48 | 27 | 27 | 54 | 17 | 28,268 | 219 | 79 | 47 | 34 | 11 | 8 |
| 18-2731 | Sheridan | 1 | 41 | 25 | 9 | 33 | 9 | 13,902 | 84 | 14 | 13 | 3 | 7 | 5 |
| TOTAL PACIFIC NORTHWEST | | - | 1,543 | 1,853 | 1,740 | 3,593 | 1,390 | 453,062 | 9,546 | 4,306 | 791 | 381 | 655 | 427 |

# Less than 500.



SECTION 10. TRADE AREA MARKETS

Analysis 10.15 Freight Traffic of Pacific Southwest Trade Areas - 1932

| NUMBER | TRADE AREA / TRADE CENTER | NUMBER OF COMMUNITIES: RAILROADS | COMMUNITIES | POPULATION: TRADE AREA RURAL (000) | TRADE AREA URBAN (000) | TRADE AREA TOTAL (000) | TRADE CENTER (000) | TRADE AREA SQUARE MILES | ON TRACK INDUSTRIES: TRADE AREA | ON TRACK INDUSTRIES: TRADE CENTER | CARS ORIGINATED: TRADE AREA (000) | CARS ORIGINATED: TRADE CENTER (000) | CARS TERMINATED: TRADE AREA (000) | CARS TERMINATED: TRADE CENTER (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CALIFORNIA | | | | | | | | | | | | | |
| 26-1406 | Bakersfield | 2 | 86 | 53 | 32 | 85 | 26 | 8,246 | 244 | 47 | 25 | 3 | 8 | 4 |
| 21-1331 | Chico | 2 | 61 | 51 | 21 | 73 | 8 | 9,818 | 136 | 44 | 10 | 1 | 7 | 2 |
| 30-1737 | El Centro | 1 | 40 | 41 | 30 | 71 | 8 | 8,084 | 192 | 62 | 34 | 10 | 8 | 2 |
| 19-1216 | Eureka | 1 | 47 | 35 | 16 | 51 | 16 | 7,695 | 69 | 38 | 7 | 2 | 4 | 2 |
| 25-1406 | Fresno | 2 | 233 | 180 | 111 | 291 | 53 | 16,693 | 1,158 | 197 | 68 | 23 | 43 | 20 |
| 21-1364 | Marysville | 2 | 27 | 26 | 13 | 39 | 6 | 2,725 | 75 | 19 | 6 | 1 | 4 | 1 |
| 22-1306 | Sacramento | 1 | 113 | 92 | 110 | 202 | 94 | 5,773 | 428 | 158 | 53 | 23 | 40 | 28 |
| 28-1509 | San Bernardino | 4 | 142 | 86 | 102 | 188 | 37 | 27,196 | 367 | 37 | 40 | 5 | 41 | 5 |
| 30-1501 | San Diego | 2 | 49 | 36 | 174 | 210 | 148 | 4,221 | 215 | 119 | 8 | 3 | 13 | 9 |
| 27-1306 | Santa Barbara | 1 | 69 | 61 | 83 | 144 | 34 | 7,746 | 192 | 36 | 22 | 1 | 12 | 2 |
| 24-1216 | Santa Cruz | 1 | 44 | 41 | 50 | 91 | 14 | 3,765 | 255 | 17 | 29 | 1 | 21 | 2 |
| 22-1217 | Santa Rosa | 2 | 102 | 66 | 27 | 93 | 11 | 6,359 | 165 | 34 | 12 | 2 | 13 | 3 |
| 25-1306 | Stockton | 3 | 89 | 117 | 77 | 194 | 48 | 7,315 | 427 | 125 | 44 | 15 | 39 | 22 |
| | Los Angeles Multiple Market | - | 145 | 342 | 2,018 | 2,360 | 1,238 | 5,298 | 1,626 | 871 | 141 | 86 | 177 | 148 |
| 28-1402 | Long Beach | 2 | 5 | 6 | 152 | 158 | 142 | 206 | 37 | 19 | 3 | 1 | 4 | 3 |
| 28-1401 | Los Angeles | 6 | 55 | 214 | 1,579 | 1,794 | 1,238 | 3,684 | 1,115 | 871 | 102 | 86 | 156 | 148 |
| 28-1406 | Pasadena | 2 | 45 | 71 | 218 | 289 | 76 | 613 | 312 | 44 | 19 | # | 11 | 3 |
| 28-1410 | Santa Ana | 3 | 40 | 50 | 69 | 119 | 30 | 795 | 162 | 34 | 18 | 1 | 6 | 1 |
| | San Francisco Multiple Market | - | 157 | 208 | 1,318 | 1,526 | 634 | 6,378 | 1,906 | 761 | 288 | 86 | 263 | 92 |
| 23-1202 | Oakland | 2 | 35 | 56 | 466 | 521 | 284 | 875 | 701 | 505 | 124 | 67 | 103 | 76 |
| 23-1201 | San Francisco | 4 | 42 | 45 | 724 | 769 | 634 | 1,084 | 849 | 761 | 92 | 86 | 103 | 92 |
| 23-1206 | San Jose | 2 | 35 | 56 | 85 | 141 | 58 | 2,654 | 251 | 143 | 25 | 17 | 36 | 25 |
| 22-1216 | Vallejo | 2 | 45 | 51 | 44 | 95 | 14 | 1,765 | 105 | 6 | 47 | 4 | 21 | 3 |
| | NEVADA | | | | | | | | | | | | | |
| 21-1931 | Elko | 5 | 19 | 8 | 3 | 11 | 3 | 21,216 | 49 | 29 | 2 | 1 | 4 | 3 |
| 26-1831 | Las Vegas | 1 | 33 | 19 | 13 | 32 | 5 | 37,667 | 106 | 24 | 11 | 1 | 14 | 3 |
| 22-1516 | Reno | 8 | 113 | 55 | 25 | 80 | 19 | 51,812 | 170 | 54 | 30 | 7 | 28 | 10 |
| 24-1731 | Tonopah* | 3 | 18 | 10 | 2 | 12 | 2 | 31,698 | 26 | 26 | 2 | - | # | - |
| | UTAH | | | | | | | | | | | | | |
| 21-2218 | Logan | 1 | 13 | 21 | 16 | 37 | 10 | 1,720 | 73 | 14 | 5 | 1 | 5 | 2 |
| 21-2220 | Ogden | 3 | 44 | 30 | 48 | 78 | 40 | 7,820 | 158 | 61 | 25 | 18 | 27 | 19 |
| 22-2214 | Provo | 4 | 18 | 39 | 32 | 71 | 15 | 7,998 | 97 | 30 | 62 | 4 | 12 | 8 |
| 22-2201 | Salt Lake City | 6 | 50 | 146 | 189 | 335 | 140 | 59,276 | 568 | 298 | 51 | 30 | 76 | 48 |
| | ARIZONA | | | | | | | | | | | | | |
| 33-2231 | Douglas | 1 | 31 | 19 | 22 | 41 | 10 | 6,170 | 78 | 21 | 10 | 2 | 12 | 8 |
| 30-2133 | Globe | 1 | 26 | 29 | 22 | 51 | 7 | 11,207 | 46 | 8 | 3 | 1 | 4 | 1 |
| 33-2131 | Nogales | 1 | 12 | 4 | 6 | 10 | 6 | 1,229 | 29 | 25 | 2 | 1 | 2 | 2 |
| 30-2006 | Phoenix | 2 | 78 | 114 | 71 | 185 | 48 | 21,211 | 317 | 162 | 21 | 6 | 27 | 12 |
| 29-2031 | Prescott | 1 | 81 | 23 | 20 | 43 | 6 | 26,773 | 134 | 31 | 8 | # | 12 | 2 |
| 32-2106 | Tucson | 1 | 7 | 19 | 33 | 51 | 33 | 8,554 | 62 | 62 | 4 | 4 | 7 | 7 |
| | WYOMING | | | | | | | | | | | | | |
| 22-2731 | Laramie | 2 | 6 | 3 | 9 | 12 | 9 | 4,399 | 31 | 24 | 8 | 5 | 5 | 5 |
| 21-2431 | Rock Springs | 1 | 13 | 14 | 16 | 30 | 8 | 19,352 | 139 | 36 | 33 | 13 | 14 | 4 |
| | COLORADO | | | | | | | | | | | | | |
| 24-2716 | Boulder | 3 | 25 | 15 | 17 | 32 | 11 | 1,553 | 98 | 33 | 11 | # | 7 | 1 |
| 26-2531 | Durango | 2 | 9 | 47 | 5 | 53 | 5 | 22,777 | 40 | 20 | 4 | # | 3 | 1 |
| 24-2416 | Grand Junction | 2 | 30 | 63 | 17 | 80 | 10 | 24,449 | 180 | 32 | 27 | 3 | 13 | 5 |
| | NEW MEXICO | | | | | | | | | | | | | |
| 28-2431 | Gallup | 1 | 34 | 50 | 10 | 60 | 6 | 26,784 | 82 | 30 | 10 | 7 | 6 | 3 |
| 31-2431 | Silver City | 2 | 13 | 16 | 4 | 19 | 4 | 10,625 | 31 | 16 | 27 | # | 26 | 1 |
| TOTAL PACIFIC SOUTHWEST | | - | 2,077 | 2,179 | 4,763 | 6,942 | 3,376 | 531,605 | 9,969 | 4,322 | 1,145 | 458 | 995 | 599 |

* Originated and Terminated Cars and Industries for Trade Center not shown - not served by Class I Railroad.
# Less than 500.

## SECTION 12. FLOW OF LOCAL TRAFFIC

### Analysis 12.1 Relation of Single to Multiple Carrier Carload Traffic - 1932

#### PERCENTAGE OF SINGLE CARRIER (LOCAL) TO TOTAL TRAFFIC

| | CAR MILES | | | | | REVENUE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | UNITED STATES | EASTERN | POCAHONTAS | SOUTHERN | WESTERN | UNITED STATES | EASTERN | POCAHONTAS | SOUTHERN | WESTERN |
| ALL COMMODITIES | 23% | 21% | 30% | 20% | 21% | 31% | 29% | 36% | 28% | 31% |
| I ROUGH MATERIAL | 53 | 51 | 55 | 50 | 57 | 61 | 57 | 75 | 61 | 64 |
| Sand, Stone and Gravel | 53 | 51 | 55 | 50 | 57 | 61 | 57 | 75 | 61 | 64 |
| II RAW MATERIAL | 24 | 20 | 34 | 19 | 26 | 33 | 29 | 38 | 26 | 38 |
| Bulk Grain and Beets | 54 | 37 | 24 | 32 | 64 | 66 | 50 | 29 | 45 | 74 |
| Perishables | 7 | 7 | 2 | 8 | 6 | 10 | 11 | 3 | 9 | 9 |
| Live Animals | 45 | 27 | 15 | 38 | 55 | 52 | 32 | 19 | 42 | 62 |
| Coal and Coke | 28 | 23 | 37 | 24 | 28 | 33 | 30 | 40 | 31 | 36 |
| Ores | 26 | 23 | 21 | 9 | 39 | 36 | 31 | 33 | 19 | 48 |
| Sulphur and Sulphuric Acid | 41 | 30 | 42 | 55 | 31 | 53 | 47 | 52 | 61 | 47 |
| Forest Products | 17 | 11 | 9 | 18 | 19 | 25 | 18 | 16 | 26 | 27 |
| III SEMIPROCESSED MATERIAL | 24 | 15 | 16 | 21 | 35 | 28 | 19 | 23 | 28 | 38 |
| Cotton, Hay and Tobacco | 32 | 12 | 14 | 24 | 47 | 38 | 17 | 23 | 34 | 48 |
| Paper and Products | 15 | 16 | 18 | 14 | 15 | 20 | 19 | 24 | 16 | 22 |
| IV NECESSARIES | 21 | 19 | 10 | 20 | 24 | 27 | 24 | 14 | 27 | 31 |
| Cereals | 24 | 20 | 14 | 19 | 29 | 27 | 24 | 18 | 19 | 34 |
| Miscellaneous Farm Products | 24 | 25 | 12 | 31 | 20 | 32 | 34 | 21 | 40 | 28 |
| Edible Animal Products | 16 | 14 | 7 | 13 | 20 | 19 | 16 | 9 | 14 | 26 |
| Oils - Vegetable and Animal | 26 | 16 | 6 | 27 | 30 | 42 | 22 | 9 | 46 | 47 |
| Manufactured Food | 22 | 24 | 6 | 14 | 23 | 30 | 31 | 11 | 21 | 32 |
| Textiles and Leather | 13 | 14 | * | 11 | 22 | 19 | 18 | 2 | 18 | 26 |
| V AUXILIARIES | 22 | 26 | 14 | 21 | 20 | 31 | 33 | 23 | 31 | 29 |
| Petroleum and Products | 20 | 26 | 27 | 26 | 17 | 32 | 36 | 40 | 39 | 27 |
| Building Materials | 26 | 21 | 18 | 18 | 35 | 34 | 28 | 28 | 27 | 45 |
| Chemicals | 16 | 17 | 5 | 15 | 17 | 18 | 17 | 7 | 19 | 18 |
| Miscellaneous | 24 | 26 | 9 | 16 | 25 | 30 | 33 | 14 | 19 | 29 |
| VI ACCESSORIES | 18 | 23 | 9 | 11 | 13 | 25 | 32 | 17 | 16 | 17 |
| Iron and Steel | 25 | 30 | 13 | 17 | 16 | 34 | 40 | 21 | 21 | 21 |
| Other Metals | 11 | 15 | 3 | 5 | 10 | 16 | 18 | 4 | 5 | 16 |
| Appliances | 14 | 16 | 6 | 7 | 12 | 16 | 19 | 10 | 11 | 14 |
| Glass and Tile | 23 | 27 | 12 | 12 | 17 | 26 | 30 | 20 | 14 | 19 |

#### PERCENTAGE OF MULTIPLE CARRIER TO TOTAL CARLOAD TRAFFIC - 1932

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 77% | 79% | 70% | 80% | 76% | 69% | 71% | 64% | 72% | 69% |
| I ROUGH MATERIAL | 47 | 49 | 45 | 50 | 43 | 39 | 43 | 25 | 39 | 36 |
| Sand, Stone and Gravel | 47 | 49 | 45 | 50 | 43 | 39 | 43 | 25 | 39 | 36 |
| II RAW MATERIAL | 76 | 80 | 66 | 81 | 74 | 67 | 71 | 62 | 74 | 62 |
| Bulk Grain and Beets | 46 | 63 | 76 | 68 | 36 | 34 | 50 | 71 | 55 | 26 |
| Perishables | 93 | 93 | 98 | 92 | 94 | 90 | 89 | 97 | 91 | 91 |
| Live Animals | 55 | 73 | 85 | 62 | 45 | 48 | 68 | 81 | 58 | 38 |
| Coal and Coke | 72 | 77 | 63 | 76 | 72 | 67 | 70 | 60 | 69 | 64 |
| Ores | 74 | 77 | 79 | 91 | 61 | 64 | 69 | 67 | 81 | 52 |
| Sulphur and Sulphuric Acid | 59 | 70 | 58 | 45 | 69 | 47 | 53 | 48 | 39 | 53 |
| Forest Products | 83 | 89 | 91 | 82 | 81 | 75 | 82 | 84 | 74 | 73 |
| III SEMIPROCESSED MATERIAL | 76 | 85 | 84 | 79 | 65 | 72 | 81 | 77 | 72 | 62 |
| Cotton, Hay and Tobacco | 68 | 88 | 86 | 76 | 53 | 62 | 83 | 77 | 66 | 52 |
| Paper and Products | 85 | 84 | 82 | 86 | 85 | 80 | 81 | 76 | 84 | 78 |
| IV NECESSARIES | 79 | 81 | 90 | 80 | 76 | 73 | 76 | 86 | 73 | 69 |
| Cereals | 76 | 80 | 86 | 81 | 71 | 73 | 76 | 82 | 81 | 66 |
| Miscellaneous Farm Products | 76 | 75 | 88 | 69 | 80 | 68 | 66 | 79 | 60 | 72 |
| Edible Animal Products | 84 | 86 | 93 | 87 | 80 | 81 | 84 | 91 | 86 | 74 |
| Oils - Vegetable and Animal | 74 | 84 | 94 | 73 | 70 | 58 | 78 | 91 | 54 | 53 |
| Manufactured Food | 78 | 76 | 94 | 86 | 77 | 70 | 69 | 89 | 79 | 68 |
| Textiles and Leather | 87 | 86 | 100 | 89 | 78 | 81 | 82 | 98 | 82 | 74 |
| V AUXILIARIES | 78 | 74 | 86 | 79 | 80 | 69 | 67 | 77 | 69 | 71 |
| Petroleum and Products | 80 | 74 | 73 | 74 | 83 | 68 | 64 | 60 | 61 | 73 |
| Building Materials | 74 | 79 | 82 | 82 | 65 | 66 | 72 | 72 | 73 | 55 |
| Chemicals | 84 | 83 | 95 | 85 | 83 | 82 | 83 | 93 | 81 | 82 |
| Miscellaneous | 76 | 74 | 91 | 84 | 75 | 70 | 67 | 86 | 81 | 71 |
| VI ACCESSORIES | 82 | 77 | 91 | 89 | 87 | 75 | 68 | 83 | 84 | 83 |
| Iron and Steel | 75 | 70 | 87 | 83 | 84 | 66 | 60 | 79 | 79 | 79 |
| Other Metals | 89 | 85 | 97 | 95 | 90 | 84 | 82 | 96 | 95 | 84 |
| Appliances | 86 | 84 | 94 | 93 | 88 | 84 | 81 | 90 | 89 | 86 |
| Glass and Tile | 77 | 73 | 88 | 88 | 83 | 74 | 70 | 80 | 86 | 81 |

* Less than half of one per cent.



## SECTION 13. FLOW OF INTERCARRIER TRAFFIC

### Analysis 13.1 Analysis of Multiple Carrier Carload Traffic - 1932

#### PERCENTAGE OF INTERLINE ORIGINATED OR TERMINATED TO TOTAL TRAFFIC

| | CAR MILES | | | | | REVENUE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | UNITED STATES | EASTERN | POCAHONTAS | SOUTHERN | WESTERN | UNITED STATES | EASTERN | POCAHONTAS | SOUTHERN | WESTERN |
| ALL COMMODITIES | 55% | 57% | 57% | 56% | 53% | 55% | 57% | 55% | 56% | 52% |
| I ROUGH MATERIAL | 38 | 37 | 29 | 39 | 38 | 35 | 38 | 19 | 34 | 33 |
| Sand, Stone and Gravel | 38 | 37 | 29 | 39 | 38 | 35 | 38 | 19 | 34 | 33 |
| II RAW MATERIAL | 54 | 57 | 57 | 59 | 48 | 54 | 57 | 55 | 59 | 48 |
| Bulk Grain and Beets | 39 | 51 | 57 | 54 | 32 | 30 | 44 | 55 | 47 | 24 |
| Perishables | 55 | 64 | 31 | 58 | 52 | 62 | 67 | 38 | 66 | 59 |
| Live Animals | 45 | 57 | 68 | 48 | 38 | 41 | 57 | 63 | 46 | 34 |
| Coal and Coke | 57 | 56 | 58 | 66 | 56 | 57 | 56 | 55 | 62 | 59 |
| Ores | 58 | 60 | 44 | 47 | 44 | 51 | 58 | 44 | 49 | 42 |
| Sulphur & Sulphuric Acid | 41 | 54 | 58 | 35 | 48 | 39 | 47 | 45 | 32 | 40 |
| Forest Products | 55 | 56 | 45 | 53 | 53 | 55 | 59 | 51 | 55 | 54 |
| III SEMIPROCESSED MATERIAL | 54 | 58 | 59 | 54 | 49 | 56 | 62 | 57 | 55 | 50 |
| Cotton, Hay and Tobacco | 51 | 59 | 59 | 54 | 46 | 51 | 65 | 57 | 52 | 46 |
| Paper and Products | 56 | 58 | 58 | 55 | 53 | 60 | 62 | 58 | 61 | 55 |
| IV NECESSARIES | 57 | 56 | 54 | 53 | 60 | 56 | 57 | 59 | 53 | 56 |
| Cereals | 59 | 57 | 61 | 57 | 60 | 58 | 59 | 64 | 60 | 55 |
| Miscellaneous Farm Products | 54 | 56 | 40 | 46 | 56 | 52 | 54 | 43 | 45 | 55 |
| Edible Animal Products | 58 | 54 | 70 | 57 | 66 | 60 | 58 | 75 | 59 | 62 |
| Oils - Vegetable and Animal | 52 | 52 | 45 | 50 | 52 | 46 | 56 | 52 | 43 | 43 |
| Manufactured Food | 57 | 56 | 52 | 50 | 59 | 55 | 56 | 57 | 53 | 56 |
| Textiles and Leather | 57 | 64 | 38 | 54 | 61 | 61 | 67 | 49 | 57 | 60 |
| V AUXILIARIES | 59 | 58 | 59 | 57 | 61 | 58 | 57 | 60 | 55 | 59 |
| Petroleum and Products | 62 | 60 | 62 | 57 | 63 | 58 | 56 | 54 | 51 | 61 |
| Building Materials | 61 | 65 | 70 | 62 | 55 | 58 | 63 | 65 | 61 | 50 |
| Chemicals | 59 | 58 | 59 | 55 | 64 | 64 | 64 | 62 | 58 | 68 |
| Miscellaneous | 56 | 56 | 57 | 56 | 55 | 56 | 55 | 62 | 59 | 57 |
| VI ACCESSORIES | 59 | 59 | 66 | 54 | 59 | 59 | 57 | 66 | 57 | 63 |
| Iron and Steel | 57 | 56 | 68 | 56 | 58 | 55 | 52 | 67 | 58 | 62 |
| Other Metals | 58 | 61 | 51 | 34 | 57 | 59 | 66 | 61 | 46 | 56 |
| Appliances | 60 | 61 | 59 | 51 | 60 | 64 | 65 | 62 | 57 | 64 |
| Glass and Tile | 60 | 58 | 77 | 57 | 61 | 62 | 60 | 73 | 61 | 63 |

#### PERCENTAGE OF INTERMEDIATE OR OVER HEAD TO TOTAL TRAFFIC

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 22% | 22% | 13% | 24% | 23% | 14% | 14% | 9% | 16% | 14% |
| I ROUGH MATERIAL | 9 | 12 | 16 | 11 | 5 | 4 | 5 | 6 | 5 | 3 |
| Sand, Stone and Gravel | 9 | 12 | 16 | 11 | 5 | 4 | 5 | 6 | 5 | 3 |
| II RAW MATERIAL | 22 | 23 | 9 | 22 | 26 | 13 | 14 | 7 | 15 | 14 |
| Bulk Grain and Beets | 7 | 12 | 19 | 14 | 4 | 4 | 6 | 16 | 8 | 8 |
| Perishables | 38 | 29 | 67 | 34 | 42 | 28 | 22 | 59 | 25 | 32 |
| Live Animals | 10 | 16 | 17 | 14 | 7 | 7 | 11 | 18 | 12 | 4 |
| Coal and Coke | 15 | 21 | 5 | 10 | 16 | 10 | 14 | 5 | 7 | 5 |
| Ores | 22 | 17 | 35 | 44 | 17 | 13 | 11 | 23 | 32 | 10 |
| Sulphur and Sulphuric Acid | 18 | 16 | 6 | 10 | 27 | 8 | 6 | 3 | 7 | 13 |
| Forest Products | 28 | 33 | 46 | 29 | 28 | 20 | 23 | 33 | 19 | 19 |
| III SEMIPROCESSED MATERIAL | 22 | 27 | 25 | 25 | 16 | 16 | 19 | 20 | 17 | 12 |
| Cotton, Hay and Tobacco | 17 | 29 | 27 | 22 | 7 | 11 | 18 | 20 | 14 | 6 |
| Paper and Products | 29 | 26 | 24 | 31 | 32 | 20 | 19 | 18 | 23 | 23 |
| IV NECESSARIES | 22 | 25 | 36 | 27 | 16 | 17 | 19 | 27 | 20 | 13 |
| Cereals | 17 | 23 | 25 | 24 | 11 | 15 | 17 | 18 | 21 | 11 |
| Miscellaneous Farm Products | 22 | 19 | 48 | 23 | 24 | 16 | 12 | 36 | 15 | 17 |
| Edible Animal Products | 26 | 32 | 23 | 30 | 14 | 21 | 26 | 16 | 27 | 12 |
| Oils - Vegetable and Animal | 22 | 32 | 49 | 23 | 18 | 12 | 22 | 39 | 11 | 10 |
| Manufactured Food | 21 | 20 | 42 | 36 | 18 | 15 | 13 | 32 | 26 | 12 |
| Textiles and Leather | 30 | 28 | 62 | 35 | 17 | 20 | 15 | 49 | 25 | 14 |
| V AUXILIARIES | 19 | 16 | 27 | 22 | 19 | 11 | 10 | 17 | 14 | 12 |
| Petroleum and Products | 18 | 14 | 11 | 17 | 20 | 10 | 8 | 6 | 10 | 12 |
| Building Materials | 13 | 14 | 12 | 20 | 10 | 8 | 9 | 7 | 12 | 5 |
| Chemicals | 25 | 25 | 36 | 30 | 19 | 18 | 19 | 31 | 23 | 14 |
| Miscellaneous | 20 | 18 | 34 | 28 | 20 | 14 | 12 | 24 | 22 | 14 |
| VI ACCESSORIES | 23 | 18 | 26 | 35 | 28 | 16 | 11 | 17 | 27 | 20 |
| Iron and Steel | 18 | 14 | 19 | 27 | 26 | 11 | 8 | 12 | 21 | 17 |
| Other Metals | 31 | 24 | 46 | 61 | 33 | 25 | 16 | 35 | 49 | 28 |
| Appliances | 26 | 23 | 35 | 42 | 28 | 20 | 16 | 28 | 32 | 22 |
| Glass and Tile | 17 | 15 | 11 | 31 | 22 | 12 | 10 | 7 | 25 | 18 |

SECTION 14. INTRATERRITORIAL COMMERCE

Analysis 14.1 Intraterritorial Interchange of Rail Cars by Eastern and Southern Railways

| RAILWAY GROUPS JUNCTIONS | LOADED CARS (000) | EMPTY CARS (000) |
|---|---|---|
| EASTERN AND SOUTHERN | | |
| All Junctions | 16,326 | 13,635 |
| NEW ENGLAND | | |
| All New England | 803 | 528 |
| Portland | 123 | 86 |
| Other Maine | 69 | 55 |
| New Hampshire | 15 | 11 |
| Vermont | 190 | 93 |
| Boston | 70 | 59 |
| Other Massachusetts | 291 | 190 |
| Rhode Island | 6 | 2 |
| Connecticut | 28 | 21 |
| New York City | 3 | 1 |
| Other New York | 9 | 5 |
| CENTRAL EAST AND POCAHONTAS | | |
| All Trunk Line | 5,683 | 4,762 |
| New York City | 802 | 584 |
| Buffalo | 904 | 708 |
| Other New York | 674 | 602 |
| New Jersey | 153 | 147 |
| Philadelphia | 266 | 197 |
| Pittsburgh | 334 | 300 |
| Other Pennsylvania | 2,323 | 1,996 |
| Delaware | 17 | 24 |
| Baltimore | 83 | 88 |
| Other Maryland | 86 | 77 |
| Washington | 41 | 41 |
| All Pocahontas | 582 | 563 |
| Norfolk | 47 | 40 |
| Other Virginia | 27 | 45 |
| West Virginia | 508 | 478 |
| All Central | 7,040 | 5,932 |
| Cincinnati | 273 | 182 |
| Cleveland | 249 | 251 |
| Columbus | 370 | 351 |
| Toledo | 561 | 487 |
| Other Ohio | 1,180 | 999 |
| Indianapolis | 152 | 121 |
| Other Indiana | 298 | 270 |
| Detroit | 286 | 291 |
| Other Michigan | 175 | 170 |
| Wisconsin | 14 | 9 |
| Chicago - Total | 2,971 | 2,267 |
| Road-to-Road | 167 | 197 |
| Road-to-Terminal | 1,840 | 1,827 |
| Terminal-to-Terminal | 964 | 243 |
| Peoria | 32 | 40 |
| Other Illinois | 143 | 141 |
| St.Louis - Total | 336 | 353 |
| Road-to-Road | 26 | 47 |
| Road-to-Terminal | 306 | 304 |
| Terminal-to-Terminal | 4 | 2 |
| All Southeastern | 10 | 9 |
| Louisville | 10 | 9 |
| All Western | 23 | 25 |
| Des Moines | 9 | 11 |
| Kansas City | 9 | 7 |
| Other Missouri | 2 | 2 |
| Omaha | 3 | 2 |
| All Canadian | 5 | 5 |
| East Canada | 5 | 5 |

| RAILWAY GROUPS JUNCTIONS | LOADED CARS (000) | EMPTY CARS (000) |
|---|---|---|
| LAKE GULF | | |
| All Central | 556 | 456 |
| Indianapolis | 5 | 4 |
| Other Indiana | 26 | 23 |
| Chicago - Total | 255 | 166 |
| Road-to-Terminal | 255 | 166 |
| Peoria | 24 | 24 |
| Other Illinois | 43 | 44 |
| St.Louis - Total | 203 | 195 |
| Road-to-Road | 3 | 3 |
| Road-to-Terminal | 200 | 192 |
| All Southeastern | 239 | 203 |
| Louisville | 33 | 30 |
| Other Kentucky | 8 | 6 |
| Memphis | 15 | 15 |
| Other Tennessee | 23 | 17 |
| Birmingham | 23 | 21 |
| Montgomery | 3 | 2 |
| Other Alabama | 29 | 27 |
| Meridian | 6 | 6 |
| Other Mississippi | 38 | 25 |
| New Orleans | 58 | 53 |
| Other Louisiana | 1 | 1 |
| All Western | 14 | 8 |
| Sioux City | 8 | 5 |
| Omaha | 6 | 3 |
| SOUTHEASTERN | | |
| All Trunk Line | 3 | 3 |
| Washington | 3 | 3 |
| All Central | 46 | 45 |
| Indiana | 8 | 7 |
| St.Louis - Total | 40 | 38 |
| Road-to-Terminal | 40 | 38 |
| All Pocahontas | 219 | 207 |
| Norfolk | 32 | 34 |
| Richmond | 127 | 116 |
| Other Virginia | 60 | 57 |
| All Southeastern | 1,101 | 889 |
| Louisville | 10 | 12 |
| Other Kentucky | 14 | 13 |
| Charlotte | 27 | 22 |
| Wilmington | 5 | 6 |
| Other North Carolina | 179 | 119 |
| Charleston | 20 | 23 |
| Columbia | 22 | 18 |
| Other South Carolina | 141 | 100 |
| Chattanooga | 36 | 28 |
| Nashville | 7 | 6 |
| Memphis | 16 | 13 |
| Other Tennessee | 46 | 35 |
| Atlanta | 119 | 90 |
| Savannah | 28 | 32 |
| Albany | 20 | 18 |
| Other Georgia | 211 | 162 |
| Jacksonville | 66 | 71 |
| Other Florida | 33 | 37 |
| Birmingham | 22 | 21 |
| Montgomery | 9 | 10 |
| Other Alabama | 43 | 32 |
| Mississippi | 16 | 12 |
| New Orleans | 12 | 10 |



SECTION 14. INTRATERRITORIAL COMMERCE

Analysis 14.2 Intraterritorial Interchange of Rail Cars by Western Railways

| RAILWAY GROUPS JUNCTIONS | LOADED CARS (000) | EMPTY CARS (000) |
|---|---|---|
| WESTERN | | |
| All Junctions | 6,734 | 6,365 |
| NORTHWESTERN | | |
| All Western Trunk Line | 3,143 | 3,027 |
| Michigan | 44 | 36 |
| Milwaukee | 28 | 27 |
| Other Wisconsin | 225 | 713 |
| Chicago - Total | 1,392 | 969 |
| Road-to-Road | 61 | 56 |
| Road-to-Terminal | 1,324 | 911 |
| Terminal-to-Terminal | 7 | 2 |
| Peoria | 15 | 14 |
| Other Illinois | 33 | 31 |
| Duluth | 91 | 90 |
| Minneapolis-St.Paul | 462 | 388 |
| Other Minnesota | 129 | 105 |
| Clinton | 11 | 13 |
| Quad Cities | 11 | 10 |
| Des Moines | 39 | 37 |
| Dubuque | 3 | 3 |
| Sioux City | 103 | 95 |
| Other Iowa | 97 | 89 |
| St.Louis - Total | 27 | 37 |
| Road-to-Terminal | 27 | 37 |
| St.Joseph | 27 | 27 |
| Kansas City | 29 | 19 |
| Other Missouri | 10 | 9 |
| North Dakota | 26 | 30 |
| Sioux Falls | 3 | 3 |
| Other South Dakota | 20 | 22 |
| Omaha | 236 | 183 |
| Other Nebraska | 36 | 37 |
| Kansas | 1 | 1 |
| Denver | 41 | 35 |
| Other Colorado | 2 | 2 |
| All Pacific Northwest | 287 | 261 |
| Montana | 74 | 69 |
| Idaho | 7 | 7 |
| Wyoming | 11 | 13 |
| Seattle | 41 | 44 |
| Spokane | 47 | 31 |
| Tacoma | 9 | 9 |
| Other Washington | 68 | 54 |
| Portland | 17 | 22 |
| Other Oregon | 7 | 6 |
| Utah | 6 | 7 |
| All Pacific Southwest | 4 | 2 |
| Los Angeles | 2 | 1 |
| Other California | 2 | 1 |
| ALL RAILWAYS | | |
| All Junctions | 23,060 | 20,000 |

| RAILWAY GROUPS JUNCTIONS | LOADED CARS (000) | EMPTY CARS (000) |
|---|---|---|
| SOUTHWESTERN | | |
| All Western Trunk Line | 253 | 229 |
| Chicago - Total | 202 | 171 |
| Road-to-Road | 6 | 12 |
| Road-to-Terminal | 196 | 159 |
| Peoria | 8 | 8 |
| Other Illinois | 14 | 15 |
| Minneapolis-St.Paul | 2 | 1 |
| Quad Cities | 3 | 2 |
| Des Moines | 6 | 8 |
| Other Iowa | 11 | 10 |
| Omaha | 13 | 20 |
| Other Nebraska | 2 | 2 |
| All Southwestern | 2,368 | 2,252 |
| St.Louis - Total | 112 | 164 |
| Road-to-Road | 15 | 24 |
| Road-to-Terminal | 96 | 139 |
| Terminal-to-Terminal | 1 | 1 |
| St.Joseph | 20 | 19 |
| Kansas City | 234 | 206 |
| Other Missouri | 56 | 50 |
| Kansas | 184 | 181 |
| Denver | 5 | 6 |
| Pueblo | 73 | 53 |
| Other Colorado | 71 | 62 |
| Texarkana | 100 | 81 |
| Other Arkansas | 101 | 106 |
| Shreveport | 83 | 75 |
| Alexandria | 21 | 19 |
| Other Louisiana | 93 | 93 |
| Tulsa | 32 | 33 |
| Oklahoma City | 58 | 61 |
| Other Oklahoma | 213 | 189 |
| Dallas | 52 | 47 |
| Dennison | 46 | 32 |
| El Paso | 82 | 67 |
| Fort Worth | 194 | 178 |
| Houston-Galveston | 100 | 122 |
| San Antonio | 21 | 35 |
| Other Texas | 411 | 364 |
| All Southeastern | 65 | 63 |
| Memphis | 23 | 24 |
| Birmingham | 3 | 2 |
| New Orleans | 39 | 37 |
| All Pacific Southwest | 614 | 531 |
| Ogden-Salt Lake City | 66 | 48 |
| Other Utah | 20 | 19 |
| Arizona | 9 | 9 |
| New Mexico | 91 | 69 |
| Nevada | 10 | 8 |
| San Francisco | 136 | 119 |
| Los Angeles | 107 | 113 |
| Other California | 176 | 147 |

SECTION 15. INTERTERRITORIAL COMMERCE

Analysis 15.1 Interterritorial Interchange of Rail Cars by Junctions - 1932

| GATEWAY JUNCTION | LOADED CARS TOTAL (000) | NORTH (000) | SOUTH (000) | EAST (000) | WEST (000) | EMPTY CARS TOTAL (000) | NORTH (000) | SOUTH (000) | EAST (000) | WEST (000) |
|---|---|---|---|---|---|---|---|---|---|---|
| **ALL GATEWAYS** | | | | | | | | | | |
| All Junctions | 7,396 | 1,963 | 1,237 | 2,660 | 1,534 | 6,220 | 999 | 1,726 | 1,221 | 2,274 |
| **HUDSON RIVER** | | | | | | | | | | |
| All Hudson River | 1,138 | 44 | 43 | 767 | 285 | 749 | 26 | 23 | 111 | 589 |
| New York City | 291 | - | - | 201 | 89 | 181 | - | - | 34 | 147 |
| Albany - Troy | 503 | - | - | 375 | 128 | 322 | - | - | 42 | 280 |
| **TRANSEAST** | | | | | | | | | | |
| All Transeast | 879 | 625 | 218 | 20 | 16 | 792 | 188 | 571 | 16 | 17 |
| Washington | 255 | 182 | 73 | - | - | 200 | 50 | 151 | - | - |
| Norfolk | 51 | 35 | 16 | - | - | 44 | 13 | 32 | - | - |
| Cincinnati | 362 | 294 | 68 | - | - | 349 | 62 | 287 | - | - |
| Louisville | 129 | 84 | 45 | - | - | 114 | 42 | 72 | - | - |
| Evansville | 44 | 29 | 15 | - | - | 48 | 20 | 28 | - | - |
| **TRANSCONTINENT** | | | | | | | | | | |
| All Transcontinent | 2,347 | 196 | 155 | 1,233 | 762 | 2,101 | 125 | 181 | 697 | 1,098 |
| Chicago | 1,093 | 122 | 85 | 533 | 353 | 1,017 | 68 | 105 | 337 | 507 |
| St. Louis | 595 | 48 | 45 | 326 | 176 | 515 | 35 | 51 | 160 | 269 |
| Memphis | 149 | - | - | 98 | 51 | 138 | - | - | 48 | 90 |
| New Orleans | 90 | - | - | 49 | 41 | 91 | - | - | 39 | 52 |
| **TRANSWEST** | | | | | | | | | | |
| All Transwest | 867 | 485 | 247 | 103 | 34 | 754 | 194 | 431 | 33 | 96 |
| Kansas City | 471 | 265 | 123 | 66 | 18 | 418 | 102 | 231 | 17 | 68 |
| Omaha | 119 | 42 | 24 | 37 | 16 | 106 | 21 | 40 | 16 | 28 |
| Denver | 62 | 35 | 27 | - | - | 53 | 22 | 32 | - | - |
| Ogden-Salt Lake | 158 | 114 | 44 | - | - | 127 | 28 | 99 | - | - |
| Portland | 39 | 20 | 20 | - | - | 30 | 15 | 15 | - | - |
| **NEW ENGLAND INTERIOR** | 72 | 25 | 40 | 4 | 2 | 52 | 32 | 14 | 2 | 4 |
| **CENTRAL EAST INTERIOR** | 721 | 279 | 186 | 119 | 137 | 592 | 137 | 234 | 116 | 104 |
| **SOUTHEAST INTERIOR** | 855 | 116 | 167 | 343 | 228 | 703 | 134 | 82 | 187 | 300 |
| **NORTHWEST INTERIOR** | 294 | 92 | 103 | 44 | 54 | 268 | 93 | 90 | 42 | 44 |
| **SOUTHWEST INTERIOR** | 182 | 80 | 58 | 27 | 16 | 170 | 53 | 78 | 17 | 22 |
| **CANADIAN INTERIOR** | 41 | 21 | 20 | - | - | 39 | 17 | 22 | - | - |



SECTION 15. INTERTERRITORIAL COMMERCE

Analysis 15.2 Interterritorial Interchange of Rail Cars by Eastern Railways - 1932

| CARRIERS JUNCTIONS | LOADED CARS TOTAL (000) | NORTH OR EAST (000) | SOUTH OR WEST (000) | EMPTY CARS TOTAL (000) | NORTH OR EAST (000) | SOUTH OR WEST (000) |
|---|---|---|---|---|---|---|
| **CENTRAL EAST - NEW ENGLAND - ALL** | 1,095 | 794 | 301 | 732 | 120 | 611 |
| Hudson River Gateways - All | 1,052 | 767 | 285 | 700 | 111 | 589 |
| New York | 291 | 201 | 89 | 181 | 34 | 147 |
| Albany-Troy | 503 | 375 | 128 | 322 | 42 | 280 |
| New England Interior | 7 | 4 | 2 | 6 | 2 | 4 |
| Central East Interior | 37 | 23 | 14 | 26 | 7 | 19 |
| **CENTRAL EAST - SOUTHEAST - ALL** | 707 | 408 | 299 | 583 | 239 | 344 |
| Transeast Gateways - All | 407 | 279 | 127 | 343 | 99 | 244 |
| Washington | 255 | 182 | 73 | 200 | 50 | 151 |
| Norfolk | 51 | 35 | 16 | 44 | 13 | 32 |
| Cincinnati | 89 | 54 | 35 | 89 | 33 | 56 |
| Louisville | 12 | 8 | 4 | 9 | 3 | 6 |
| Transcontinent Gateways - All | 13 | 5 | 8 | 14 | 7 | 7 |
| St. Louis | 13 | 5 | 8 | 14 | 7 | 7 |
| Central East Interior | 22 | 18 | 3 | 19 | 2 | 16 |
| Southeast Interior | 266 | 106 | 160 | 208 | 131 | 76 |
| **CENTRAL EAST - LAKE GULF - ALL** | 785 | 553 | 232 | 706 | 205 | 501 |
| Transeast Gateways - All | 436 | 346 | 90 | 416 | 90 | 326 |
| Cincinnati | 273 | 240 | 33 | 261 | 30 | 231 |
| Louisville | 118 | 76 | 42 | 105 | 39 | 66 |
| Evansville | 44 | 29 | 15 | 48 | 20 | 28 |
| Transcontinent Gateways - All | 242 | 140 | 102 | 193 | 81 | 113 |
| Chicago | 164 | 97 | 67 | 126 | 54 | 73 |
| St. Louis | 61 | 34 | 27 | 51 | 19 | 31 |
| Central East Interior | 90 | 57 | 32 | 87 | 31 | 56 |
| Southeast Interior | 17 | 10 | 7 | 9 | 3 | 6 |
| **CENTRAL EAST - NORTHWEST - ALL** | 1,030 | 570 | 460 | 956 | 439 | 517 |
| Transcontinent Gateways - All | 854 | 479 | 375 | 802 | 367 | 434 |
| Chicago | 622 | 354 | 268 | 592 | 264 | 328 |
| St. Louis | 42 | 19 | 23 | 60 | 38 | 22 |
| Transwest Gateways - All | 24 | 17 | 7 | 29 | 9 | 21 |
| Kansas City | 16 | 12 | 4 | 21 | 4 | 17 |
| Omaha | 8 | 5 | 3 | 8 | 5 | 4 |
| Central East Interior | 122 | 59 | 63 | 106 | 53 | 53 |
| Northwest Interior | 30 | 15 | 15 | 19 | 10 | 9 |
| **CENTRAL EAST - SOUTHWEST - ALL** | 703 | 485 | 218 | 591 | 173 | 418 |
| Transcontinent Gateways - All | 601 | 414 | 187 | 503 | 150 | 354 |
| Chicago | 173 | 116 | 57 | 173 | 51 | 122 |
| St. Louis | 356 | 247 | 109 | 270 | 78 | 192 |
| Transwest Gateways - All | 67 | 54 | 13 | 64 | 13 | 51 |
| Kansas City | 67 | 54 | 13 | 64 | 13 | 51 |
| Central East Interior | 21 | 14 | 7 | 14 | 5 | 9 |
| Northwest Interior | 14 | 3 | 10 | 10 | 5 | 5 |
| **CENTRAL EAST - CANADIAN - ALL** | 357 | 208 | 150 | 276 | 104 | 171 |
| Hudson River Gateways | 20 | 10 | 11 | 18 | 9 | 9 |
| Central East Interior | 317 | 183 | 134 | 238 | 90 | 147 |
| Canadian Interior | 20 | 15 | 5 | 20 | 5 | 15 |
| **NEW ENGLAND - CANADIAN - ALL** | 131 | 59 | 73 | 77 | 49 | 28 |
| Hudson River Gateways | 66 | 34 | 32 | 31 | 17 | 14 |
| New England Interior | 65 | 25 | 40 | 46 | 32 | 14 |

Analysis 15.3 Interterritorial Interchange of Rail Cars by Southern and Western Railways - 1932

| CARRIERS — JUNCTIONS | LOADED CARS TOTAL (000) | LOADED CARS NORTH OR EAST (000) | LOADED CARS SOUTH OR WEST (000) | EMPTY CARS TOTAL (000) | EMPTY CARS NORTH OR EAST (000) | EMPTY CARS SOUTH OR WEST (000) |
|---|---|---|---|---|---|---|
| SOUTHEAST - LAKE GULF - ALL | 532 | 315 | 217 | 459 | 184 | 275 |
| Transeast Gateways | 19 | 11 | 9 | 20 | 9 | 11 |
| Transcontinent Gateways - All | 41 | 21 | 20 | 39 | 20 | 20 |
| St. Louis | 5 | 2 | 4 | 4 | 3 | 1 |
| Memphis | 20 | 12 | 8 | 19 | 8 | 10 |
| New Orleans | 15 | 7 | 8 | 17 | 9 | 8 |
| Central East Interior | 8 | 1 | 7 | 9 | 8 | 1 |
| Southeast Interior | 464 | 282 | 182 | 391 | 148 | 243 |
| SOUTHEAST - NORTHWEST - ALL | 9 | 5 | 4 | 8 | 5 | 3 |
| Transeast Gateways | 5 | 3 | 3 | 2 | 2 | * |
| Transcontinent Gateways - All | 4 | 2 | 1 | 4 | 3 | 1 |
| St. Louis | 4 | 2 | 1 | 4 | 3 | 1 |
| Central East Interior | * | * | * | 2 | * | 2 |
| SOUTHEAST - SOUTHWEST - ALL | 162 | 98 | 64 | 144 | 58 | 86 |
| Transcontinent Gateways - All | 98 | 61 | 37 | 90 | 38 | 53 |
| St. Louis | 15 | 8 | 8 | 15 | 9 | 7 |
| Memphis | 53 | 36 | 16 | 49 | 18 | 32 |
| New Orleans | 23 | 13 | 11 | 21 | 10 | 11 |
| Central East Interior | 1 | 1 | * | 1 | * | 1 |
| Southeast Interior | 64 | 37 | 27 | 53 | 20 | 33 |
| NORTHWEST - LAKE GULF - ALL | 285 | 166 | 120 | 248 | 98 | 150 |
| Transeast Gateways | 12 | 7 | 5 | 10 | 5 | 6 |
| Transcontinent Gateways - All | 138 | 97 | 41 | 115 | 31 | 84 |
| Chicago | 83 | 61 | 23 | 72 | 17 | 56 |
| St.Louis | 14 | 7 | 7 | 11 | 6 | 4 |
| Transwest Gateways - All | 38 | 27 | 11 | 28 | 8 | 20 |
| Omaha | 38 | 27 | 11 | 28 | 8 | 20 |
| Central East Interior | 47 | 12 | 35 | 44 | 30 | 14 |
| Northwest Interior | 50 | 23 | 27 | 51 | 25 | 26 |
| NORTHWEST - SOUTHWEST - ALL | 1,144 | 699 | 446 | 1,019 | 372 | 648 |
| Transcontinent Gateways - All | 96 | 52 | 44 | 98 | 37 | 61 |
| Chicago | 43 | 25 | 18 | 46 | 14 | 32 |
| St. Louis | 20 | 10 | 10 | 21 | 8 | 12 |
| Transwest Gateways - All | 731 | 485 | 247 | 625 | 194 | 431 |
| Kansas City | 388 | 265 | 123 | 333 | 102 | 231 |
| Omaha | 66 | 42 | 24 | 61 | 21 | 40 |
| Denver | 62 | 35 | 27 | 53 | 22 | 32 |
| Ogden-Salt Lake | 158 | 114 | 44 | 127 | 28 | 99 |
| Portland | 39 | 20 | 20 | 30 | 15 | 15 |
| Central East Interior | 37 | 20 | 16 | 28 | 13 | 15 |
| Northwest Interior | 159 | 72 | 86 | 152 | 80 | 72 |
| Southwest Interior | 122 | 70 | 52 | 116 | 48 | 68 |
| NORTHWEST - CANADA - ALL | 57 | 26 | 31 | 49 | 25 | 24 |
| Northwest Interior | 37 | 20 | 17 | 30 | 13 | 18 |
| Canadian Interiors | 20 | 6 | 15 | 19 | 12 | 7 |
| SOUTHWEST - LAKE GULF - ALL | 379 | 229 | 151 | 354 | 142 | 212 |
| Transcontinent Gateways - All | 261 | 159 | 101 | 241 | 89 | 153 |
| Chicago | 8 | 2 | 6 | 7 | 6 | 2 |
| St. Louis | 65 | 41 | 23 | 65 | 23 | 42 |
| Memphis | 77 | 49 | 28 | 70 | 23 | 48 |
| New Orleans | 51 | 29 | 22 | 52 | 20 | 32 |
| Transwest Gateways - All | 6 | 4 | 1 | 7 | 3 | 4 |
| Omaha | 6 | 4 | 1 | 7 | 3 | 4 |
| Central East Interior | 20 | 9 | 11 | 18 | 12 | 6 |
| Southeast Interior | 44 | 25 | 19 | 43 | 19 | 24 |
| Northwest Interior | 5 | 4 | 2 | 8 | 3 | 4 |
| Southwest Interior | 43 | 27 | 16 | 38 | 17 | 22 |
| SOUTHWEST - MEXICO - ALL | 17 | 10 | 6 | 16 | 6 | 10 |
| Southwest Interior | 17 | 10 | 6 | 16 | 6 | 10 |

* Less than 500 cars.



Analysis 16.1 Interterritorial Movement of Freight Carloads - December 13, 1933

| ORIGIN TERRITORY | CARS ORIGINATED | DESTINATION DISTRICTS AND TERRITORIES: EASTERN | SOUTHERN | WESTERN | NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CARLOADS | | | | | | | | | | | | | |
| United States | 49,105 | 26,015 | 7,740 | 15,350 | 2,648 | 11,009 | 12,358 | 1,964 | 5,776 | 7,678 | 3,628 | 1,637 | 2,407 |
| Eastern | 21,817 | 19,380 | 908 | 1,529 | 2,328 | 9,137 | 7,915 | 425 | 483 | 1,162 | 175 | 47 | 145 |
| Southern | 9,857 | 3,435 | 5,995 | 427 | 115 | 1,036 | 2,284 | 1,458 | 4,537 | 267 | 150 | 5 | 5 |
| Western | 17,431 | 3,200 | 837 | 13,394 | 205 | 836 | 2,159 | 81 | 756 | 6,249 | 3,303 | 1,585 | 2,257 |
| New England | 1,861 | 1,790 | 48 | 23 | 1,393 | 288 | 109 | 31 | 17 | 16 | 3 | 3 | 1 |
| Trunk Line | 9,972 | 9,523 | 290 | 159 | 693 | 7,703 | 1,127 | 178 | 112 | 66 | 43 | 7 | 43 |
| Central | 9,984 | 8,067 | 570 | 1,347 | 242 | 1,146 | 6,679 | 216 | 354 | 1,080 | 129 | 37 | 101 |
| Pocahontas | 3,584 | 2,000 | 1,511 | 73 | 50 | 717 | 1,233 | 1,255 | 256 | 65 | 7 | 1 | - |
| Southeastern | 6,273 | 1,435 | 4,484 | 354 | 65 | 319 | 1,051 | 203 | 4,281 | 202 | 143 | 4 | 5 |
| Western Trunk Line | 7,776 | 2,051 | 293 | 5,432 | 155 | 508 | 1,388 | 52 | 241 | 4,941 | 308 | 43 | 138 |
| Southwestern | 4,498 | 472 | 445 | 3,581 | 13 | 74 | 385 | 17 | 428 | 712 | 2,804 | 6 | 59 |
| Pacific Northwest | 2,305 | 223 | 37 | 2,045 | 2 | 59 | 182 | 1 | 36 | 367 | 74 | 1,419 | 185 |
| Pacific Southwest | 2,852 | 454 | 62 | 2,336 | 35 | 195 | 224 | 11 | 51 | 229 | 117 | 115 | 1,875 |
| REVENUE (Thousands) | | | | | | | | | | | | | |
| United States | $5,571 | $2,982 | $ 822 | $1,767 | $ 325 | $1,297 | $1,360 | $ 225 | $ 597 | $ 849 | $ 422 | $ 187 | $ 309 |
| Eastern | 2,173 | 1,745 | 148 | 280 | 241 | 869 | 635 | 54 | 94 | 127 | 56 | 25 | 72 |
| Southern | 1,152 | 544 | 508 | 100 | 25 | 170 | 349 | 150 | 358 | 65 | 28 | 3 | 4 |
| Western | 2,246 | 693 | 166 | 1,387 | 59 | 258 | 376 | 21 | 145 | 657 | 338 | 159 | 233 |
| New England | 170 | 151 | 11 | 8 | 98 | 35 | 18 | 7 | 4 | 4 | 1 | 2 | 1 |
| Trunk Line | 1,022 | 912 | 50 | 60 | 102 | 678 | 132 | 22 | 28 | 18 | 16 | 5 | 21 |
| Central | 981 | 682 | 87 | 212 | 41 | 196 | 485 | 25 | 62 | 105 | 39 | 18 | 50 |
| Pocahontas | 459 | 281 | 160 | 18 | 9 | 94 | 178 | 127 | 33 | 15 | 2 | 1 | - |
| Southeastern | 693 | 263 | 348 | 82 | 16 | 76 | 171 | 23 | 325 | 50 | 26 | 2 | 4 |
| Western Trunk Line | 853 | 289 | 70 | 494 | 38 | 123 | 128 | 11 | 59 | 384 | 50 | 13 | 47 |
| Southwestern | 532 | 124 | 59 | 349 | 4 | 22 | 98 | 5 | 54 | 112 | 220 | 2 | 15 |
| Pacific Northwest | 374 | 86 | 15 | 273 | 1 | 26 | 59 | 1 | 14 | 96 | 27 | 118 | 32 |
| Pacific Southwest | 487 | 194 | 22 | 271 | 16 | 67 | 91 | 4 | 18 | 65 | 41 | 26 | 139 |
| PERCENTAGE OF CARLOADS | | | | | | | | | | | | | |
| United States | | 53% | 16% | 31% | 5% | 22% | 25% | 4% | 12% | 16% | 7% | 3% | 5% |
| Eastern | | 89 | 4 | 7 | 11 | 42 | 36 | 2 | 2 | 5 | 1 | # | 1 |
| Southern | | 35 | 61 | 4 | 1 | 11 | 23 | 15 | 46 | 33 | 2 | # | # |
| Western | | 18 | 5 | 77 | 1 | 5 | 12 | # | 4 | 36 | 19 | 9 | 13 |
| New England | | 96 | 3 | 1 | 75 | 15 | 6 | 2 | 1 | 1 | # | # | # |
| Trunk Line | | 96 | 3 | 2 | 7 | 77 | 11 | 2 | 1 | 1 | # | # | # |
| Central | | 81 | 6 | 13 | 2 | 11 | 67 | 2 | 4 | 11 | 1 | # | 1 |
| Pocahontas | | 56 | 42 | 2 | 1 | 20 | 34 | 35 | 7 | 2 | # | # | - |
| Southeastern | | 23 | 71 | 6 | 1 | 5 | 17 | 3 | 68 | 3 | 2 | # | # |
| Western Trunk Line | | 28 | 4 | 70 | 2 | 7 | 18 | 1 | 3 | 64 | 4 | 1 | 2 |
| Southwestern | | 11 | 10 | 80 | # | 2 | 9 | # | 10 | 16 | 62 | # | 1 |
| Pacific Northwest | | 10 | 2 | 89 | # | 3 | 7 | # | 2 | 16 | 3 | 62 | 8 |
| Pacific Southwest | | 16 | 2 | 82 | 1 | 7 | 8 | # | 2 | 8 | 4 | 4 | 66 |
| PERCENTAGE OF REVENUE | | | | | | | | | | | | | |
| United States | | 54% | 15% | 32% | 6% | 23% | 24% | 4% | 11% | 15% | 8% | 3% | 6% |
| Eastern | | 80 | 7 | 13 | 11 | 40 | 29 | 2 | 4 | 6 | 3 | 1 | 3 |
| Southern | | 47 | 44 | 9 | 2 | 15 | 30 | 13 | 31 | 6 | 2 | # | # |
| Western | | 31 | 7 | 62 | 3 | 11 | 17 | 1 | 6 | 29 | 15 | 7 | 10 |
| New England | | 89 | 6 | 5 | 58 | 21 | 11 | 4 | 2 | 2 | 1 | 1 | 1 |
| Trunk Line | | 89 | 5 | 6 | 10 | 66 | 13 | 2 | 3 | 2 | 2 | # | 2 |
| Central | | 70 | 9 | 22 | 4 | 16 | 49 | 3 | 6 | 11 | 4 | 2 | 5 |
| Pocahontas | | 61 | 35 | 4 | 2 | 20 | 39 | 28 | 7 | 3 | # | # | - |
| Southeastern | | 38 | 50 | 12 | 2 | 11 | 25 | 3 | 47 | 7 | 4 | # | 1 |
| Western Trunk Line | | 34 | 8 | 58 | 4 | 14 | 15 | 1 | 7 | 45 | 6 | 2 | 6 |
| Southwestern | | 23 | 11 | 66 | 1 | 4 | 18 | 1 | 10 | 21 | 41 | # | 3 |
| Pacific Northwest | | 23 | 4 | 73 | # | 7 | 16 | # | 4 | 26 | 7 | 32 | 9 |
| Pacific Southwest | | 40 | 5 | 56 | 3 | 18 | 19 | 1 | 4 | 13 | 8 | 5 | 29 |

# Less than 1/2%

Analysis 16.2 Commodity Movement - Cars Terminated in United States - December 13, 1933

| COMMODITY GROUP | CARS ORIGINATED | PERCENTAGE DISTRIBUTION OF CARS BY DESTINATION TERRITORIES: NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 49,105 | 5% | 22% | 25% | 4% | 12% | 16% | 8% | 3% | 5% |
| I ROUGH MATERIAL | 1,592 | 1 | 16 | 16 | 5 | 26 | 11 | 19 | 1 | 5 |
| Sand, Stone and Gravel | 1,592 | 1 | 16 | 16 | 5 | 26 | 11 | 19 | 1 | 5 |
| II RAW MATERIAL | 27,694 | 5 | 23 | 27 | 4 | 9 | 19 | 4 | 5 | 4 |
| Bulk Grain and Beets | 3,085 | 1 | 9 | 18 | 1 | 3 | 48 | 4 | 11 | 5 |
| Perishables | 2,199 | 9 | 22 | 23 | 3 | 10 | 13 | 10 | 6 | 4 |
| Live Animals | 2,696 | 2 | 11 | 34 | 1 | 3 | 31 | 5 | 2 | 11 |
| Coal and Coke | 14,804 | 5 | 31 | 33 | 7 | 6 | 14 | 1 | 1 | 2 |
| Ores | 876 | 2 | 18 | 14 | 3 | 17 | 5 | 4 | 6 | 31 |
| Sulphur and Sulphuric Acid | 586 | 1 | 8 | 8 | 4 | 66 | 2 | 7 | * | 4 |
| Forest Products | 3,448 | 6 | 12 | 16 | 3 | 23 | 14 | 11 | 12 | 3 |
| III SEMIPROCESSED MATERIAL | 2,033 | 7 | 13 | 14 | 7 | 23 | 9 | 18 | 1 | 8 |
| Cotton, Hay and Tobacco | 1,305 | 5 | 5 | 5 | 10 | 31 | 9 | 25 | 1 | 9 |
| Paper and Products | 728 | 11 | 28 | 30 | 3 | 9 | 9 | 3 | 1 | 6 |
| IV NECESSARIES | 6,133 | 8 | 23 | 18 | 3 | 18 | 11 | 11 | 3 | 5 |
| Cereals | 1,737 | 10 | 25 | 15 | 3 | 15 | 11 | 14 | 5 | 2 |
| Miscellaneous Farm Products | 895 | 2 | 18 | 21 | 4 | 21 | 9 | 16 | 2 | 7 |
| Edible Animal Products | 1,398 | 14 | 37 | 22 | 3 | 13 | 3 | 4 | 1 | 3 |
| Oils - Vegetable and Animal | 488 | 1 | 9 | 9 | 2 | 36 | 10 | 23 | 1 | 9 |
| Manufactured Food | 1,369 | 3 | 18 | 18 | 2 | 14 | 20 | 9 | 5 | 11 |
| Textiles and Leather | 246 | 13 | 16 | 14 | 2 | 37 | 13 | 3 | 1 | 1 |
| V AUXILIARIES | 8,001 | 8 | 19 | 25 | 3 | 11 | 15 | 12 | 2 | 5 |
| Petroleum and Products | 5,180 | 8 | 15 | 26 | 2 | 12 | 17 | 14 | 2 | 4 |
| Building Materials | 1,042 | 5 | 20 | 18 | 3 | 17 | 11 | 15 | 2 | 9 |
| Chemicals | 273 | 5 | 27 | 31 | 3 | 15 | 8 | 4 | 3 | 4 |
| Miscellaneous | 1,506 | 9 | 28 | 27 | 4 | 5 | 11 | 5 | 2 | 9 |
| VI ACCESSORIES | 3,652 | 4 | 33 | 30 | 3 | 10 | 7 | 6 | 2 | 5 |
| Iron and Steel | 2,432 | 4 | 36 | 34 | 2 | 9 | 5 | 5 | 1 | 4 |
| Other Metals | 92 | 3 | 43 | 33 | 1 | 1 | 8 | 4 | 6 | 1 |
| Appliances | 840 | 4 | 26 | 20 | 4 | 13 | 11 | 10 | 2 | 10 |
| Glass and Tile | 288 | 9 | 24 | 26 | 6 | 8 | 14 | 5 | 4 | 4 |

| COMMODITY GROUP | TOTAL REVENUE | PERCENTAGE DISTRIBUTION OF REVENUE BY DESTINATION TERRITORIES: NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | $5,571,683 | 6% | 23% | 24% | 4% | 11% | 15% | 8% | 3% | 6% |
| I ROUGH MATERIAL | 92,362 | 6 | 17 | 16 | 5 | 27 | 9 | 15 | 1 | 4 |
| Sand, Stone and Gravel | 92,362 | 6 | 17 | 16 | 5 | 27 | 9 | 15 | 1 | 4 |
| II RAW MATERIAL | 2,988,675 | 5 | 25 | 27 | 5 | 8 | 17 | 5 | 4 | 4 |
| Bulk Grain and Beets | 319,834 | 1 | 10 | 16 | 1 | 6 | 41 | 5 | 14 | 6 |
| Perishables | 591,348 | 7 | 25 | 25 | 2 | 9 | 15 | 12 | 3 | 2 |
| Live Animals | 223,087 | 4 | 17 | 29 | 2 | 3 | 23 | 4 | 2 | 16 |
| Coal and Coke | 1,434,415 | 5 | 32 | 33 | 8 | 5 | 12 | 1 | 2 | 2 |
| Ores | 60,634 | 4 | 25 | 18 | 3 | 11 | 11 | 6 | 7 | 15 |
| Sulphur and Sulphuric Acid | 49,174 | 2 | 13 | 13 | 6 | 48 | 5 | 8 | 2 | 3 |
| Forest Products | 310,183 | 5 | 18 | 27 | 2 | 13 | 19 | 8 | 4 | 4 |
| III SEMIPROCESSED MATERIAL | 198,944 | 7 | 14 | 14 | 5 | 19 | 10 | 24 | 2 | 5 |
| Cotton, Hay and Tobacco | 116,540 | 6 | 5 | 6 | 7 | 24 | 8 | 37 | 1 | 6 |
| Paper and Products | 83,404 | 8 | 26 | 25 | 3 | 11 | 14 | 7 | 3 | 3 |
| IV NECESSARIES | 846,079 | 9 | 28 | 16 | 3 | 17 | 12 | 7 | 2 | 6 |
| Cereals | 161,037 | 14 | 30 | 13 | 4 | 16 | 8 | 8 | 4 | 3 |
| Miscellaneous Farm Products | 113,217 | 2 | 20 | 31 | 6 | 14 | 15 | 7 | 1 | 4 |
| Edible Animal Products | 285,669 | 15 | 42 | 12 | 3 | 15 | 2 | 3 | 1 | 7 |
| Oils - Vegetable and Animal | 51,578 | 1 | 12 | 15 | 3 | 31 | 14 | 14 | 2 | 8 |
| Manufactured Food | 205,782 | 3 | 16 | 16 | 2 | 12 | 25 | 12 | 4 | 10 |
| Textiles and Leather | 28,796 | 14 | 13 | 13 | 2 | 29 | 19 | 4 | 4 | 2 |
| V AUXILIARIES | 946,114 | 6 | 16 | 24 | 3 | 13 | 17 | 11 | 3 | 7 |
| Petroleum and Products | 602,387 | 5 | 13 | 25 | 2 | 15 | 21 | 11 | 3 | 5 |
| Building Materials | 97,123 | 5 | 20 | 15 | 3 | 16 | 12 | 15 | 3 | 11 |
| Chemicals | 57,265 | 4 | 18 | 43 | 3 | 10 | 7 | 7 | 5 | 3 |
| Miscellaneous | 189,339 | 8 | 25 | 24 | 4 | 5 | 13 | 7 | 3 | 11 |
| VI ACCESSORIES | 498,509 | 4 | 24 | 22 | 3 | 11 | 9 | 12 | 4 | 11 |
| Iron and Steel | 298,436 | 4 | 27 | 28 | 2 | 8 | 8 | 12 | 3 | 8 |
| Other Metals | 13,156 | 4 | 41 | 32 | 2 | 2 | 6 | 3 | 10 | 0 |
| Appliances | 154,364 | 3 | 16 | 10 | 5 | 16 | 9 | 14 | 6 | 21 |
| Glass and Tile | 32,553 | 10 | 22 | 20 | 6 | 8 | 20 | 6 | 2 | 6 |

* Less than 1/2%



Analysis 16.3 Commodity Movement - Cars Terminated - December 13, 1933
Originated in New England

| COMMODITY GROUP | CARS ORIGINATED | PERCENTAGE DISTRIBUTION BY DESTINATION TERRITORIES: NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 1,861 | 75% | 15% | 6% | 2% | 1% | 1% | #% | #% | #% |
| I ROUGH MATERIAL | 18 | 56% | 33% | 11% | - | - | - | - | - | - |
| Sand, Stone and Gravel | 18 | 56 | 33 | 11 | - | - | - | - | - | - |
| II RAW MATERIAL* | 884 | 78% | 13% | 5% | 1% | 1% | 1% | #% | #% | #% |
| Bulk Grain and Beets | 9 | 100 | - | - | - | - | - | - | - | - |
| Perishables | 185 | 49 | 27 | 9 | 3 | 4 | 4 | 2 | 2 | 1 |
| Live Animals | 15 | 80 | 13 | - | - | - | 7 | - | - | - |
| Coal and Coke | 366 | 100 | # | - | - | - | - | - | - | - |
| Ores | 7 | 29 | 71 | - | - | - | - | - | - | - |
| Sulphur and Sulphuric Acid | 7 | 100 | - | - | - | - | - | - | - | - |
| Forest Products | 275 | 67 | 20 | 11 | 1 | # | - | - | - | - |
| III SEMIPROCESSED MATERIAL* | 144 | 47% | 31% | 16% | - | 5% | 1% | - | - | - |
| Cotton, Hay and Tobacco | 16 | 94 | - | 6 | - | - | - | - | - | - |
| Paper and Products | 128 | 41 | 34 | 17 | - | 5 | 2 | - | - | - |
| IV NECESSARIES* | 176 | 72% | 21% | 7% | 1% | - | - | - | - | - |
| Cereals | 84 | 96 | 4 | - | - | - | - | - | - | - |
| Miscellaneous Farm Products | 29 | 28 | 62 | 10 | - | - | - | - | - | - |
| Edible Animal Products | 10 | 70 | 30 | - | - | - | - | - | - | - |
| Oils - Vegetables and Animal | 6 | 33 | 67 | - | - | - | - | - | - | - |
| Manufactured Food | 19 | 47 | 21 | 26 | 5 | - | - | - | - | - |
| Textiles and Leather | 28 | 68 | 18 | 14 | - | - | - | - | - | - |
| V AUXILIARIES* | 534 | 88% | 9% | 2% | - | #% | 1% | - | - | - |
| Petroleum and Products | 401 | 98 | 2 | - | - | - | - | - | - | - |
| Building Materials | 19 | 74 | 21 | 5 | - | - | - | - | - | - |
| Chemicals | 9 | 78 | - | 11 | - | - | 11 | - | - | - |
| Miscellaneous | 105 | 55 | 31 | 10 | - | 1 | 2 | - | - | - |
| VI ACCESSORIES* | 105 | 29% | 38% | 10% | 20% | - | 3% | - | - | - |
| Iron and Steel | 60 | 37 | 42 | 15 | 3 | - | 3 | - | - | - |
| Other Metals | 6 | 33 | 50 | 17 | - | - | - | - | - | - |
| Appliances | 34 | 9 | 32 | 3 | 56 | - | - | - | - | - |
| Glass and Tile | 5 | 60 | 20 | - | - | - | 20 | - | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
\# Less than 1/2%

Analysis 16.4 Commodity Movement - Cars Terminated - December 13, 1933 - Originated in Trunk Line and Central Territories

| COMMODITY GROUP | CARS ORIGINATED | PERCENTAGE DISTRIBUTION BY DESTINATION TERRITORIES: NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| ORIGINATED IN TRUNK LINE TERRITORY | | | | | | | | | | |
| ALL COMMODITIES | 9,972 | 7% | 77% | 11% | 2% | 1% | 1% | #% | #% | #% |
| I ROUGH MATERIAL | 234 | 1 | 85 | 13 | 1 | # | - | - | - | - |
| Sand, Stone and Gravel | 234 | 1 | 85 | 13 | 1 | # | - | - | - | - |
| II RAW MATERIAL* | 5,836 | 7 | 82 | 10 | 1 | # | # | # | # | - |
| Bulk Grain and Beets | 200 | 5 | 90 | # | 1 | 3 | - | - | - | - |
| Perishables | 203 | 18 | 36 | 26 | 7 | 6 | 2 | 3 | # | - |
| Live Animals | 63 | 22 | 68 | 5 | 3 | 2 | - | - | - | - |
| Coal and Coke | 4,952 | 6 | 85 | 9 | # | - | - | - | - | - |
| Ores | 126 | 9 | 73 | 17 | - | 1 | - | - | - | - |
| Sulphur and Sulphuric Acid | 62 | 2 | 68 | 11 | 16 | 3 | - | - | - | - |
| Forest Products | 210 | 4 | 70 | 21 | 1 | 2 | - | 1 | - | - |
| III SEMIPROCESSED MATERIAL* | 267 | 15 | 60 | 13 | 3 | 3 | 4 | # | 1 | - |
| Cotton, Hay and Tobacco | 65 | 34 | 58 | 2 | 2 | 3 | 2 | - | - | - |
| Paper and Products | 202 | 9 | 61 | 17 | 3 | 3 | 5 | 1 | 1 | - |
| IV NECESSARIES* | 826 | 13 | 70 | 11 | 2 | 2 | 1 | - | - | 1 |
| Cereals | 344 | 19 | 75 | 4 | 2 | 1 | - | - | - | - |
| Miscellaneous Farm Products | 127 | 3 | 64 | 27 | 1 | 2 | 3 | - | - | 1 |
| Edible Animal Products | 47 | 17 | 75 | 2 | 4 | 2 | - | - | - | - |
| Oils - Vegetable and Animal | 35 | 9 | 60 | 23 | - | 3 | - | - | - | 6 |
| Manufactured Food | 231 | 11 | 67 | 12 | 3 | 3 | 3 | - | - | 2 |
| Textiles and Leather | 42 | 10 | 67 | 7 | 5 | 12 | - | - | - | - |
| V AUXILIARIES* | 1,658 | 6 | 73 | 13 | 5 | 1 | 1 | 1 | # | # |
| Petroleum and Products | 916 | 3 | 81 | 10 | 4 | # | 1 | # | # | - |
| Building Materials | 229 | 14 | 72 | 9 | 2 | 1 | 1 | - | - | - |
| Chemicals | 85 | 2 | 61 | 19 | 8 | 4 | 1 | 4 | - | 1 |
| Miscellaneous | 428 | 8 | 58 | 20 | 6 | # | 3 | 2 | 1 | 1 |
| VI ACCESSORIES* | 1,151 | 5 | 67 | 16 | 3 | 4 | 1 | 2 | - | 3 |
| Iron and Steel | 952 | 5 | 69 | 16 | 2 | 2 | 1 | 2 | - | 3 |
| Other Metals | 26 | - | 81 | 19 | - | - | - | - | - | - |
| Appliances | 118 | 7 | 47 | 16 | 3 | 23 | - | 3 | - | - |
| Glass and Tile | 55 | 11 | 62 | 7 | 7 | 2 | 9 | - | - | 2 |
| ORIGINATED IN CENTRAL TERRITORY | | | | | | | | | | |
| ALL COMMODITIES | 9,984 | 2% | 11% | 67% | 2% | 4% | 11% | 1% | #% | 1% |
| I ROUGH MATERIAL | 259 | 2 | 5 | 81 | 5 | 5 | 2 | - | - | - |
| Sand, Stone and Gravel | 259 | 2 | 5 | 81 | 5 | 5 | 2 | - | - | - |
| II RAW MATERIAL* | 4,880 | 1 | 7 | 76 | 1 | 1 | 13 | # | # | # |
| Bulk Grain and Beets | 584 | 1 | 14 | 73 | 1 | 6 | 5 | # | - | - |
| Perishables | 86 | 9 | 16 | 43 | 10 | 9 | 12 | - | - | - |
| Live Animals | 546 | 3 | 29 | 62 | 2 | # | 2 | # | # | # |
| Coal and Coke | 3,352 | - | 1 | 81 | # | # | 17 | # | # | - |
| Ores | 127 | 3 | 33 | 56 | 6 | - | 2 | 1 | - | - |
| Sulphur and Sulphuric Acid | 28 | - | 4 | 64 | 14 | 7 | 11 | - | - | - |
| Forest Products | 157 | 4 | 13 | 68 | 4 | 2 | 10 | - | - | - |
| III SEMIPROCESSED MATERIAL* | 268 | 9 | 12 | 47 | 5 | 12 | 13 | 1 | - | # |
| Cotton, Hay and Tobacco | 110 | 15 | 10 | 34 | 8 | 25 | 9 | - | - | - |
| Paper and Products | 158 | 6 | 14 | 56 | 3 | 3 | 16 | 1 | - | 1 |
| IV NECESSARIES* | 1,126 | 8 | 28 | 39 | 7 | 10 | 5 | 2 | 1 | 1 |
| Cereals | 305 | 6 | 31 | 36 | 9 | 14 | 4 | - | 1 | 1 |
| Miscellaneous Farm Products | 135 | 5 | 19 | 57 | 4 | 10 | 4 | 1 | - | - |
| Edible Animal Products | 348 | 17 | 38 | 25 | 8 | 10 | 1 | 1 | - | 1 |
| Oils- Vegetable and Animal | 23 | - | 22 | 48 | 9 | 13 | 9 | - | - | - |
| Manufactured Food | 294 | 3 | 20 | 48 | 6 | 5 | 10 | 5 | 1 | 3 |
| Textiles and Leather | 21 | 14 | 5 | 48 | - | 14 | 19 | - | - | - |
| V AUXILIARIES* | 1,891 | 2 | 6 | 73 | 2 | 3 | 11 | 1 | # | 1 |
| Petroleum and Products | 1,150 | - | # | 85 | # | 2 | 11 | 1 | - | - |
| Building Materials | 206 | 1 | 14 | 66 | 4 | 10 | 3 | 1 | - | - |
| Chemicals | 78 | 5 | 15 | 50 | 1 | 10 | 10 | 4 | 3 | 1 |
| Miscellaneous | 457 | 5 | 16 | 50 | 4 | 3 | 16 | 2 | 1 | 4 |
| VI ACCESSORIES | 1,580 | 3 | 20 | 51 | 2 | 5 | 9 | 4 | 1 | 4 |
| Iron and Steel | 926 | 2 | 17 | 55 | 1 | 3 | 6 | 4 | 1 | 1 |
| Other Metals | 27 | - | 37 | 37 | - | 4 | 15 | - | 7 | - |
| Appliances | 494 | 3 | 25 | 27 | 1 | 10 | 13 | 7 | 3 | 12 |
| Glass and Tile | 113 | 11 | 19 | 48 | 6 | 4 | 11 | 2 | - | 1 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Less than 1/2%



Analysis 16.5 Commodity Movement - Cars Terminated - December 13, 1933 - Originated in Pocahontas and Southeastern Territories

| COMMODITY GROUP | CARS ORIGINATED | PERCENTAGE DISTRIBUTION BY DESTINATION TERRITORIES: NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| ORIGINATED IN POCAHONTAS TERRITORY | | | | | | | | | | |
| ALL COMMODITIES | 3,584 | 1% | 20% | 34% | 35% | 7% | 2% | #% | #% | -% |
| I ROUGH MATERIAL | 96 | - | 33 | 6 | 53 | 7 | - | - | - | - |
| Sand, Stone and Gravel | 96 | - | 33 | 6 | 53 | 7 | - | - | - | - |
| II RAW MATERIAL* | 2,918 | 1 | 19 | 38 | 35 | 5 | 2 | # | - | # |
| Bulk Grain and Beets | 4 | - | - | - | 50 | 50 | - | - | - | - |
| Perishables | 47 | 4 | 57 | 6 | 4 | 26 | - | 2 | - | - |
| Live Animals | 39 | - | 92 | 3 | 3 | - | 3 | - | - | - |
| Coal and Coke | 2,644 | 1 | 16 | 42 | 35 | 4 | 2 | # | # | - |
| Ores | 29 | - | 14 | - | 76 | 10 | - | - | - | - |
| Sulphur and Sulphuric Acid | 12 | - | 17 | - | 58 | 25 | - | - | - | - |
| Forest Products | 143 | 3 | 38 | 11 | 46 | 2 | - | - | - | - |
| III SEMIPROCESSED MATERIAL* | 103 | - | 11 | 5 | 62 | 19 | 2 | 1 | - | - |
| Cotton, Hay and Tobacco | 75 | - | 3 | - | 79 | 19 | - | - | - | - |
| Paper and Products | 28 | - | 32 | 18 | 18 | 21 | 7 | 4 | - | - |
| IV NECESSARIES* | 84 | 2 | 18 | 14 | 24 | 39 | 2 | - | - | - |
| Cereals | 18 | - | - | 6 | 50 | 44 | - | - | - | - |
| Miscellaneous Farm Products | 29 | - | 31 | 21 | 28 | 14 | 7 | - | - | - |
| Edible Animal Products | 5 | 20 | 60 | - | - | 20 | - | - | - | - |
| Oils - Vegetable and Animal | 6 | - | 33 | - | 17 | 50 | - | - | - | - |
| Manufactured Feed | 15 | 7 | 7 | 20 | 7 | 60 | - | - | - | - |
| Textiles and Leather | 11 | - | - | 18 | 9 | 73 | - | - | - | - |
| V AUXILIARIES* | 239 | 2 | 25 | 16 | 35 | 17 | 5 | # | - | - |
| Petroleum and Products | 115 | 1 | 9 | 20 | 46 | 23 | 2 | - | - | - |
| Building Materials | 31 | - | 29 | 6 | 55 | 10 | - | - | - | - |
| Chemicals | 14 | - | 43 | 14 | 7 | 21 | 7 | 7 | - | - |
| Miscellaneous | 79 | 4 | 43 | 15 | 16 | 11 | 10 | - | - | - |
| VI ACCESSORIES* | 144 | 5 | 33 | 34 | 13 | 10 | 4 | 1 | - | - |
| Iron and Steel | 82 | 2 | 38 | 37 | 15 | 7 | 1 | - | - | - |
| Other Metals | 4 | - | 75 | 25 | - | - | - | - | - | - |
| Appliances | 11 | - | 18 | 45 | 9 | - | 27 | - | - | - |
| Glass and Tile | 47 | 11 | 26 | 28 | 11 | 17 | 4 | 4 | - | - |
| ORIGINATED IN SOUTHEASTERN TERRITORY | | | | | | | | | | |
| ALL COMMODITIES | 6,273 | 1% | 5% | 17% | 3% | 68% | 3% | 2% | #% | #% |
| I ROUGH MATERIAL | 403 | # | 2 | # | 2 | 94 | - | 1 | - | - |
| Sand, Stone and Gravel | 403 | # | 2 | # | 2 | 94 | - | 1 | - | - |
| II RAW MATERIAL* | 3,525 | 1 | 6 | 25 | 2 | 60 | 4 | 1 | # | - |
| Bulk Grain and Beets | 36 | - | 3 | - | 3 | 94 | - | - | - | - |
| Perishables | 387 | 5 | 22 | 30 | 3 | 22 | 11 | 6 | - | - |
| Live Animals | 80 | 1 | 16 | 9 | 1 | 69 | 4 | - | - | - |
| Coal and Coke | 1,505 | - | # | 42 | 3 | 49 | 4 | 1 | # | - |
| Ores | 174 | - | 6 | 3 | - | 83 | 7 | - | 1 | - |
| Sulphur and Sulphuric Acid | 399 | - | # | 4 | # | 95 | 1 | 1 | - | - |
| Forest Products | 944 | 1 | 9 | 12 | 2 | 71 | 2 | 1 | # | - |
| III SEMIPROCESSED MATERIAL* | 442 | 2 | 2 | 6 | 14 | 74 | # | 1 | - | - |
| Cotton, Hay and Tobacco | 397 | 2 | 2 | 4 | 15 | 77 | # | - | - | - |
| Paper and Products | 45 | 2 | 7 | 22 | 7 | 51 | 2 | 9 | - | - |
| IV NECESSARIES* | 777 | 1 | 5 | 7 | 4 | 77 | 3 | 3 | # | 1 |
| Cereals | 131 | - | 1 | 1 | 3 | 93 | - | 2 | - | - |
| Miscellaneous Farm Products | 199 | - | 6 | 11 | 7 | 75 | 1 | - | - | 1 |
| Edible Animal Products | 35 | 6 | 11 | - | 11 | 66 | - | 6 | - | - |
| Oils - Vegetable and Animal | 179 | - | 6 | 5 | 3 | 84 | # | 1 | - | - |
| Manufactured Food | 123 | - | 2 | 11 | 1 | 68 | 7 | 10 | - | 1 |
| Textiles and Leather | 110 | 4 | 5 | 12 | 3 | 64 | 10 | 1 | 1 | 1 |
| V AUXILIARIES* | 822 | 1 | 4 | 7 | 2 | 79 | 2 | 5 | - | # |
| Petroleum and Products | 486 | - | # | 4 | # | 90 | 1 | 5 | - | - |
| Building Materials | 159 | 1 | 1 | 4 | 2 | 90 | - | 3 | - | - |
| Chemicals | 53 | 4 | 8 | 30 | - | 47 | 9 | 2 | - | - |
| Miscellaneous | 124 | 4 | 18 | 13 | 8 | 40 | 7 | 10 | - | 1 |
| VI ACCESSORIES* | 304 | 2 | 10 | 6 | 1 | 68 | 5 | 8 | - | - |
| Iron and Steel | 221 | 1 | 6 | 6 | # | 71 | 7 | 8 | - | - |
| Other Metals | 3 | - | 67 | - | 33 | - | - | - | - | - |
| Appliances | 67 | 4 | 21 | 4 | 3 | 58 | 1 | 7 | - | - |
| Glass and Tile | 13 | - | 8 | - | - | 77 | - | 15 | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Less than 1/2%.

Analysis 16.6 Commodity Movement - Cars Terminated - December 13, 1933 - Originated in Western Trunk Line and Pacific Northwest Territories

| COMMODITY GROUP | CARS ORIGINATED | PERCENTAGE DISTRIBUTION BY DESTINATION TERRITORIES: NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| ORIGINATED IN WESTERN TRUNK LINE TERRITORY | | | | | | | | | | |
| ALL COMMODITIES | 7,776 | 2% | 7% | 18% | 1% | 3% | 61% | 10% | 1% | 2% |
| I ROUGH MATERIAL | 168 | - | 1 | 4 | - | - | 95 | 1 | - | - |
| Sand, Stone and Gravel | 168 | - | 1 | 4 | - | - | 95 | 1 | - | - |
| II RAW MATERIAL* | 4,766 | # | 1 | 18 | # | 1 | 76 | 2 | - | 2 |
| Bulk Grain and Beets | 1,615 | - | # | 7 | # | 1 | 88 | 2 | 1 | 2 |
| Perishables | 131 | 2 | 2 | 25 | 1 | 12 | 31 | 27 | - | - |
| Live Animals | 1,306 | 1 | 3 | 12 | 1 | 1 | 69 | # | # | 3 |
| Coal and Coke | 1,248 | - | # | 1 | - | - | 97 | 2 | # | # |
| Ores | 27 | - | 11 | 59 | - | 4 | 22 | 4 | - | - |
| Sulphur and Sulphuric Acid | 8 | - | - | 38 | 13 | - | 25 | - | 13 | 13 |
| Forest Products | 431 | - | 3 | 30 | # | # | 65 | 1 | - | # |
| III SEMIPROCESSED MATERIAL* | 197 | 1 | 3 | 28 | 1 | 4 | 55 | 6 | 2 | 2 |
| Cotton, Hay and Tobacco | 110 | 1 | - | 7 | - | 4 | 82 | 5 | 1 | - |
| Paper and Products | 87 | 1 | 6 | 55 | 2 | 3 | 21 | 6 | 2 | 3 |
| IV NECESSARIES* | 1,760 | 7 | 23 | 21 | 2 | 10 | 26 | 7 | # | 2 |
| Cereals | 517 | 2 | 15 | 24 | 3 | 11 | 32 | 11 | # | 1 |
| Miscellaneous Farm Products | 59 | 2 | 14 | 20 | - | 5 | 49 | 10 | - | - |
| Edible Animal Products | 855 | 13 | 36 | 23 | 2 | 13 | 5 | 4 | # | 3 |
| Oils - Vegetable and Animal | 23 | - | - | 17 | - | 4 | 74 | - | 4 | - |
| Manufactured Food | 281 | 1 | 5 | 9 | 1 | 2 | 68 | 10 | # | 3 |
| Textiles and Leather | 25 | 8 | - | 12 | - | 8 | 64 | 8 | - | - |
| V AUXILIARIES* | 738 | 1 | 2 | 13 | # | 1 | 75 | 7 | 1 | 1 |
| Petroleum and Products | 495 | - | # | 8 | - | # | 86 | 5 | - | # |
| Building Materials | 123 | - | 2 | 11 | - | 6 | 64 | 15 | 2 | - |
| Chemicals | 10 | - | 10 | 40 | - | - | 40 | - | - | 10 |
| Miscellaneous | 110 | 5 | 11 | 34 | 1 | 1 | 39 | 5 | 2 | 2 |
| VI ACCESSORIES* | 147 | 4 | 7 | 12 | 1 | 3 | 38 | 18 | 5 | 11 |
| Iron and Steel | 54 | - | 2 | 15 | - | 9 | 35 | 13 | 11 | 15 |
| Other Metals | 7 | 14 | 14 | 29 | - | - | 29 | 14 | - | - |
| Appliances | 65 | 8 | 14 | 9 | 2 | - | 26 | 29 | 2 | 12 |
| Glass and Tile | 21 | - | - | 10 | - | - | 86 | 5 | - | - |
| ORIGINATED IN PACIFIC NORTHWEST TERRITORY | | | | | | | | | | |
| ALL COMMODITIES | 2,305 | 1% | 3% | 7% | #% | 2% | 16% | 3% | 66% | 8% |
| I ROUGH MATERIAL | 20 | - | - | - | - | - | 20 | - | 75 | 5 |
| Sand, Stone & Gravel | 20 | - | - | - | - | - | 20 | - | 75 | 5 |
| II RAW MATERIAL* | 1,785 | # | 3 | 8 | # | 2 | 15 | 4 | 60 | 9 |
| Bulk Grain and Beets | 400 | - | - | 1 | - | - | 5 | - | 84 | 11 |
| Perishables | 397 | - | 7 | 18 | # | 7 | 18 | 14 | 27 | 11 |
| Live Animals | 120 | - | 2 | 3 | - | - | 28 | 1 | 38 | 28 |
| Coal and Coke | 185 | - | - | - | - | - | 28 | - | 70 | 2 |
| Ores | 56 | - | - | 5 | - | - | 7 | - | 88 | - |
| Sulphur and Sulphuric Acid | 1 | - | 100 | - | - | - | - | - | - | - |
| Forest Products | 626 | # | 3 | 9 | - | 1 | 15 | 1 | 64 | 6 |
| III SEMIPROCESSED MATERIAL* | 33 | - | - | 3 | - | - | 15 | 15 | 58 | 9 |
| Cotton, Hay and Tobacco | 18 | - | - | - | - | - | 6 | - | 78 | 17 |
| Paper & Products | 15 | - | - | 7 | - | - | 27 | 33 | 33 | - |
| IV NECESSARIES* | 225 | - | 6 | 7 | - | # | 10 | 2 | 70 | 5 |
| Cereals | 87 | - | - | 3 | - | 1 | 4 | - | 92 | - |
| Miscellaneous Farm Products | 36 | - | 17 | 19 | - | - | 25 | 3 | 33 | 3 |
| Edible Animal Products | 23 | - | 22 | 17 | - | - | - | - | 39 | 22 |
| Oils - Vegetable and Animal | 5 | - | 20 | 20 | - | - | - | - | 60 | - |
| Manufactured Food | 73 | - | 3 | - | - | - | 14 | 4 | 71 | 8 |
| Textiles and Leather | 1 | - | - | - | - | - | - | - | 100 | - |
| V AUXILIARIES* | 202 | - | - | 2 | - | - | 30 | 1 | 15 | 2 |
| Petroleum and Products | 162 | - | - | 1 | - | - | 37 | - | 60 | 2 |
| Building Materials | 22 | - | - | - | - | - | - | 5 | 95 | - |
| Chemicals | 3 | - | - | - | - | - | - | - | 100 | - |
| Miscellaneous | 15 | - | - | 20 | - | - | 7 | - | 67 | 7 |
| VI ACCESSORIES* | 40 | - | - | 8 | - | - | 8 | - | 73 | 13 |
| Iron and Steel | 13 | - | - | - | - | - | 8 | - | 92 | - |
| Other Metals | 5 | - | - | 40 | - | - | - | - | 60 | - |
| Appliances | 11 | - | - | 9 | - | - | 9 | - | 36 | 45 |
| Glass and Tile | 11 | - | - | - | - | - | 9 | - | 91 | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls. For reconciliation by primary commodities see Analysis 3.0.
# Less than 1/2%.



Analysis 16.7 Commodity Movement - Cars Terminated - December 13, 1933 - Originated in Southwestern and Pacific Southwest Territories

| COMMODITY GROUP | CARS ORIGINATED | PERCENTAGE DISTRIBUTION BY DESTINATION TERRITORIES: NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| ORIGINATED IN SOUTHWESTERN TERRITORY | | | | | | | | | | |
| ALL COMMODITIES | 4,498 | #% | 2% | 9% | #% | 10% | 16% | 62% | #% | 1% |
| I ROUGH MATERIAL | 318 | - | # | 2 | - | 2 | # | 96 | - | # |
| Sand, Stone and Gravel | 318 | - | # | 2 | - | 2 | # | 96 | - | # |
| II RAW MATERIAL* | 1,381 | # | 4 | 7 | # | 7 | 24 | 55 | # | 2 |
| Bulk Grain and Beets | 122 | - | 2 | 1 | - | 5 | 3 | 86 | - | 3 |
| Perishables | 103 | 6 | 29 | 37 | - | 1 | 13 | 13 | 2 | - |
| Live Animals | 278 | - | 1 | 5 | - | 3 | 36 | 49 | - | 6 |
| Coal and Coke | 235 | - | - | - | - | - | 62 | 35 | - | 3 |
| Ores | 45 | - | 9 | 9 | - | 2 | 27 | 51 | - | 2 |
| Sulphur and Sulphuric Acid | 48 | - | - | 2 | - | - | 10 | 85 | 2 | - |
| Forest Products | 550 | - | 2 | 7 | # | 16 | 8 | 67 | - | # |
| III SEMIPROCESSED MATERIAL* | 419 | # | # | 3 | - | 16 | 2 | 79 | - | - |
| Cotton, Hay and Tobacco | 394 | # | 1 | 1 | - | 13 | 2 | 83 | - | - |
| Paper and Products | 25 | - | - | 24 | - | 60 | 8 | 8 | - | - |
| IV NECESSARIES* | 789 | # | 3 | 6 | 2 | 16 | 8 | 65 | # | 1 |
| Cereals | 221 | - | - | 1 | - | 10 | 2 | 87 | - | - |
| Miscellaneous Farm Products | 176 | 1 | 1 | 6 | 6 | 6 | 9 | 72 | - | - |
| Edible Animal Products | 60 | 3 | 28 | 17 | 2 | 10 | 5 | 33 | - | 2 |
| Oils - Vegetable and Animal | 161 | - | - | 2 | - | 9 | 16 | 70 | 1 | 2 |
| Manufactured Food | 164 | - | 1 | 12 | - | 45 | 7 | 35 | - | - |
| Textile and Leather | 7 | - | - | - | - | 43 | 14 | 43 | - | - |
| V AUXILIARIES* | 1,477 | # | # | 14 | # | 8 | 20 | 56 | # | 1 |
| Petroleum and Products | 1,228 | # | # | 15 | # | 9 | 21 | 53 | - | 1 |
| Building Materials | 163 | - | - | 4 | - | 4 | 13 | 77 | - | 2 |
| Chemicals | 9 | - | - | 67 | - | 11 | 11 | 11 | - | - |
| Miscellaneous | 77 | - | - | 18 | - | 5 | 16 | 56 | 1 | 4 |
| VI ACCESSORIES* | 114 | - | - | 15 | 3 | 3 | 21 | 58 | - | 1 |
| Iron and Steel | 62 | - | - | 8 | - | 3 | 24 | 65 | - | - |
| Other Metals | 11 | - | - | 82 | - | - | 9 | 9 | - | - |
| Appliances | 28 | - | - | 7 | 7 | - | 21 | 61 | - | 4 |
| Glass and Tile | 13 | - | - | 8 | 8 | 8 | 15 | 62 | - | - |
| ORIGINATED IN PACIFIC SOUTHWEST TERRITORY | | | | | | | | | | |
| ALL COMMODITIES | 2,852 | 1% | 7% | 8% | #% | 2% | 8% | 1% | 1% | 66% |
| I ROUGH MATERIAL | 76 | - | - | - | - | - | - | - | - | 100 |
| Sand, Stone and Gravel | 76 | - | - | - | - | - | - | - | - | 100 |
| II RAW MATERIAL* | 1,719 | 2 | 11 | 9 | 1 | 3 | 11 | 5 | 5 | 53 |
| Bulk Grain and Beets | 95 | - | 1 | 5 | - | - | 4 | - | - | 89 |
| Perishables | 660 | 5 | 27 | 22 | 2 | 6 | 15 | 11 | 4 | 8 |
| Live Animals | 219 | - | # | # | - | - | 12 | - | 1 | 87 |
| Coal and Coke | 297 | - | - | - | - | - | 13 | 2 | 22 | 63 |
| Ores | 285 | - | - | - | - | - | 1 | 4 | - | 95 |
| Sulphur and Sulphuric Acid | 21 | - | - | - | - | - | - | 5 | - | 95 |
| Forest Products | 112 | 2 | 4 | 8 | - | 3 | 13 | - | 1 | 70 |
| III SEMIPROCESSED MATERIAL* | 160 | - | - | 2 | - | - | 2 | - | 1 | 96 |
| Cotton, Hay and Tobacco | 120 | - | - | 3 | - | - | 3 | - | 1 | 94 |
| Paper and Products | 40 | - | - | - | - | - | - | - | - | 100 |
| IV NECESSARIES* | 370 | - | 3 | 12 | - | 2 | 7 | 4 | 3 | 69 |
| Cereals | 30 | - | - | 3 | - | 10 | - | - | 3 | 83 |
| Miscellaneous Farm Products | 105 | - | 5 | 20 | - | 1 | 10 | 3 | 3 | 58 |
| Edible Animal Products | 15 | - | 33 | - | - | - | - | - | - | 67 |
| Oils-Vegetable and Animal | 50 | - | - | 16 | - | - | 10 | - | - | 74 |
| Manufactured Food | 169 | - | 1 | 9 | - | 1 | 6 | 6 | 4 | 73 |
| Textiles and Leather | 1 | - | - | - | - | - | - | 100 | - | - |
| V AUXILIARIES* | 440 | - | - | 3 | - | - | 3 | 1 | 1 | 92 |
| Petroleum and Products | 227 | - | - | 2 | - | - | 3 | 2 | 1 | 91 |
| Building Materials | 90 | - | - | - | - | - | 3 | 1 | - | 96 |
| Chemicals | 12 | - | - | 8 | - | - | - | - | 25 | 67 |
| Miscellaneous | 111 | - | - | 6 | - | - | 2 | - | - | 92 |
| VI ACCESSORIES* | 87 | - | - | 3 | - | - | - | 6 | 6 | 85 |
| Iron and Steel | 62 | - | - | 3 | - | - | - | 2 | 6 | 89 |
| Other Metals | 3 | - | - | - | - | - | - | 67 | - | 33 |
| Appliances | 12 | - | - | 8 | - | - | - | 17 | 8 | 67 |
| Glass and Tile | 10 | - | - | - | - | - | - | - | - | 100 |

* Where commodities of two groups have been combined the total is placed under the group in which the predominant commodity falls.
# Less than 1/2%.

Analysis 16.8 Comparative Statement of Revenues of Interdistrict and Intradistrict Traffic - United States and by Districts - December 13, 1933

| | UNITED STATES | | | | | EASTERN DISTRICT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | PERCENTAGE OF AGGREGATE REVENUE | | | | | PERCENTAGE OF AGGREGATE REVENUE | | | |
| | AGGREGATE REVENUE | INTRA-DISTRICT | INTERDISTRICT TOTAL | INBOUND | OUTBOUND | AGGREGATE REVENUE | INTRA-DISTRICT | INTERDISTRICT TOTAL | INBOUND | OUTBOUND |
| ALL COMMODITIES | $5,571,683 | 66% | 34% | - | - | $2,173,022 | 67% | 33% | 24% | 09% |
| I ROUGH MATERIAL | 92,362 | 90 | 10 | - | - | 32,028 | 87 | 13 | 10 | 03 |
| Sand, Stone and Gravel | 92,362 | 90 | 10 | - | - | 32,028 | 87 | 13 | 10 | 03 |
| II RAW MATERIAL | 2,988,675 | 66 | 34 | - | - | 1,025,983 | 67 | 33 | 29 | 04 |
| Bulk Grain and Beets | 319,834 | 88 | 12 | - | - | 76,293 | 82 | 18 | 11 | 07 |
| Perishables | 591,348 | 39 | 61 | - | - | 69,327 | 25 | 75 | 70 | 05 |
| Live Animals | 223,087 | 67 | 33 | - | - | 48,536 | 57 | 43 | 41 | 02 |
| Coal and Coke | 1,434,415 | 73 | 27 | - | - | 742,241 | 79 | 21 | 18 | 03 |
| Ores | 60,634 | 75 | 25 | - | - | 20,022 | 76 | 24 | 21 | 03 |
| Sulphur and Sulphuric Acid | 49,174 | 80 | 20 | - | - | 11,945 | 67 | 33 | 20 | 13 |
| Forest Products | 310,183 | 60 | 40 | - | - | 57,619 | 50 | 50 | 48 | 02 |
| III SEMIPROCESSED MATERIAL | 199,944 | 74 | 26 | - | - | 68,112 | 71 | 29 | 15 | 14 |
| Cotton, Hay and Tobacco | 116,540 | 81 | 19 | - | - | 14,160 | 56 | 44 | 30 | 14 |
| Paper and Products | 83,404 | 65 | 35 | - | - | 53,952 | 76 | 24 | 10 | 14 |
| IV NECESSARIES | 846,079 | 53 | 47 | - | - | 258,531 | 55 | 45 | 36 | 09 |
| Cereals | 161,037 | 66 | 34 | - | - | 74,202 | 76 | 24 | 17 | 07 |
| Miscellaneous Farm Products | 113,217 | 56 | 44 | - | - | 29,862 | 53 | 47 | 40 | 07 |
| Edible Animal Products | 285,669 | 29 | 71 | - | - | 63,093 | 36 | 64 | 58 | 06 |
| Oils - Vegetable and Animal | 51,578 | 76 | 24 | - | - | 9,172 | 59 | 41 | 32 | 09 |
| Manufactured Food | 205,782 | 67 | 33 | - | - | 73,533 | 65 | 35 | 16 | 19 |
| Textiles and Leather | 28,796 | 57 | 43 | - | - | 8,669 | 62 | 38 | 26 | 12 |
| V AUXILIARIES | 946,114 | 75 | 25 | - | - | 410,737 | 77 | 23 | 13 | 10 |
| Petroleum and Products | 602,387 | 82 | 18 | - | - | 220,138 | 82 | 18 | 13 | 05 |
| Building Materials | 97,123 | 86 | 14 | - | - | 40,276 | 86 | 14 | 6 | 8 |
| Chemicals | 57,265 | 44 | 56 | - | - | 29,061 | 56 | 44 | 28 | 16 |
| Miscellaneous | 189,339 | 56 | 44 | - | - | 121,262 | 67 | 33 | 13 | 20 |
| VI ACCESSORIES | 498,509 | 57 | 43 | - | - | 377,631 | 68 | 32 | 05 | 27 |
| Iron and Steel | 298,436 | 66 | 34 | - | - | 230,067 | 78 | 22 | 4 | 18 |
| Other Metals | 13,156 | 57 | 43 | - | - | 7,197 | 67 | 33 | 24 | 09 |
| Appliances | 154,364 | 39 | 61 | - | - | 122,390 | 45 | 55 | 5 | 50 |
| Glass and Tile | 32,553 | 58 | 42 | - | - | 17,977 | 66 | 34 | 15 | 19 |
| | SOUTHERN DISTRICT | | | | | WESTERN DISTRICT | | | | |
| ALL COMMODITIES | $1,152,859 | 52% | 48% | 16% | 32% | $2,245,802 | 69% | 31% | 9% | 22% |
| I ROUGH MATERIAL | 32,718 | 87 | 13 | 05 | 08 | 27,616 | 95 | 05 | 02 | 03 |
| Sand, Stone, and Gravel | 32,718 | 87 | 13 | 05 | 08 | 27,616 | 95 | 05 | 02 | 03 |
| II RAW MATERIAL | 786,718 | 48 | 52 | 08 | 44 | 1,175,974 | 73 | 27 | 06 | 21 |
| Bulk Grain and Beets | 4,177 | 29 | 71 | 71 | - | 239,364 | 92 | 08 | 01 | 07 |
| Perishables | 110,659 | 21 | 79 | 26 | 53 | 411,362 | 53 | 47 | 05 | 42 |
| Live Animals | 10,750 | 43 | 57 | 30 | 27 | 163,801 | 74 | 26 | 01 | 25 |
| Coal and Coke | 530,596 | 52 | 48 | 01 | 47 | 161,578 | 82 | 18 | 18 | - |
| Ores | 14,541 | 60 | 40 | 06 | 34 | 26,071 | 80 | 20 | 07 | 13 |
| Sulphur and Sulphuric Acid | 28,553 | 86 | 14 | 05 | 09 | 8,676 | 82 | 18 | 10 | 08 |
| Forest Products | 87,442 | 50 | 50 | 09 | 41 | 165,122 | 74 | 26 | 03 | 23 |
| III SEMIPROCESSED MATERIAL | 39,568 | 66 | 34 | 21 | 13 | 92,264 | 81 | 19 | 07 | 12 |
| Cotton, Hay and Tobacco | 29,706 | 74 | 26 | 18 | 08 | 72,674 | 90 | 10 | 01 | 09 |
| Paper and Products | 9,862 | 39 | 61 | 34 | 27 | 19,590 | 50 | 50 | 28 | 22 |
| IV NECESSARIES | 93,775 | 44 | 56 | 41 | 15 | 493,773 | 54 | 46 | 05 | 41 |
| Cereals | 9,046 | 40 | 60 | 58 | 02 | 77,789 | 58 | 42 | 03 | 39 |
| Miscellaneous Farm Products | 25,730 | 57 | 43 | 19 | 24 | 57,625 | 58 | 42 | 04 | 38 |
| Edible Animal Products | 4,712 | 10 | 90 | 87 | 03 | 217,864 | 26 | 74 | 01 | 73 |
| Oils - Vegetable and Animal | 17,883 | 82 | 18 | 08 | 10 | 24,523 | 82 | 18 | 03 | 15 |
| Manufactured Food | 21,824 | 42 | 58 | 36 | 22 | 110,425 | 76 | 24 | 11 | 13 |
| Textiles and Leather | 14,580 | 53 | 47 | 12 | 35 | 5,547 | 54 | 46 | 33 | 13 |
| V AUXILIARIES | 138,507 | 67 | 33 | 18 | 15 | 396,870 | 76 | 24 | 10 | 14 |
| Petroleum and Products | 83,150 | 79 | 21 | 16 | 5 | 299,099 | 83 | 17 | 04 | 13 |
| Building Materials | 14,481 | 72 | 28 | 20 | 08 | 42,366 | 92 | 08 | 03 | 05 |
| Chemicals | 12,632 | 29 | 71 | 21 | 50 | 15,572 | 25 | 75 | 32 | 43 |
| Miscellaneous | 28,244 | 32 | 68 | 24 | 44 | 39,833 | 42 | 58 | 41 | 17 |
| VI ACCESSORIES | 61,573 | 33 | 67 | 36 | 31 | 59,305 | 39 | 61 | 56 | 05 |
| Iron and Steel | 41,478 | 41 | 59 | 21 | 38 | 26,891 | 39 | 61 | 58 | 03 |
| Other Metals | 1,827 | 20 | 80 | 13 | 67 | 4,132 | 45 | 55 | 16 | 39 |
| Appliances | 10,592 | 25 | 75 | 63 | 12 | 21,382 | 33 | 67 | 62 | 05 |
| Glass and Tile | 7,676 | 29 | 71 | 22 | 49 | 6,900 | 61 | 39 | 31 | 08 |



Analysis 16.9 Comparative Statement of Revenues of Intraterritorial and Interterritorial Traffic - Eastern District Territories - December 13, 1933

| | NEW ENGLAND | | | | | TRUNK LINE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | PERCENTAGE OF AGGREGATE REVENUE | | | | | PERCENTAGE OF AGGREGATE REVENUE | | | |
| | AGGREGATE REVENUE | INTRA-DISTRICT | INTERDISTRICT TOTAL | INBOUND | OUTBOUND | AGGREGATE REVENUE | INTRA-DISTRICT | INTERDISTRICT TOTAL | INBOUND | OUTBOUND |
| ALL COMMODITIES | $ 170,004 | 40% | 60% | 46% | 14% | $1,021,507 | 58% | 42% | 27% | 15% |
| I ROUGH MATERIAL | 1,283 | 13 | 87 | 73 | 14 | 13,745 | 61 | 39 | 23 | 16 |
| Sand, Stone and Gravel | 1,283 | 13 | 87 | 73 | 14 | 13,745 | 61 | 39 | 23 | 16 |
| II RAW MATERIAL | 79,389 | 37 | 63 | 47 | 16 | 570,573 | 66 | 34 | 24 | 10 |
| Bulk Grain and Beets | 940 | 52 | 48 | 48 | - | 19,029 | 64 | 36 | 29 | 07 |
| Perishables | 35,361 | 33 | 67 | 39 | 28 | 25,288 | 08 | 92 | 82 | 10 |
| Live Animals | 1,195 | 17 | 83 | 79 | 04 | 5,533 | 16 | 84 | 79 | 05 |
| Coal and Coke | 18,394 | 37 | 63 | 63 | 00 | 480,683 | 83 | 17 | 7 | 10 |
| Ores | 1,675 | 13 | 87 | 62 | 25 | 9,453 | 37 | 63 | 43 | 20 |
| Sulphur and Sulphuric Acid | 919 | 88 | 12 | 12 | - | 7,220 | 64 | 36 | 15 | 21 |
| Forest Products | 21,505 | 47 | 53 | 18 | 35 | 23,367 | 29 | 71 | 55 | 16 |
| III SEMIPROCESSED MATERIAL | 15,964 | 31 | 69 | 31 | 38 | 26,332 | 49 | 51 | 27 | 24 |
| Cotton, Hay and Tobacco | 743 | 18 | 82 | 81 | 01 | 4,776 | 45 | 55 | 31 | 24 |
| Paper and Products | 15,221 | 35 | 65 | 13 | 52 | 21,556 | 50 | 50 | 26 | 24 |
| IV NECESSARIES | 19,200 | 29 | 71 | 66 | 05 | 93,382 | 32 | 68 | 55 | 13 |
| Cereals | 10,759 | 63 | 37 | 36 | 01 | 36,708 | 60 | 40 | 27 | 13 |
| Miscellaneous Farm Products | 2,353 | 23 | 77 | 40 | 37 | 13,358 | 32 | 68 | 46 | 22 |
| Edible Animal Product | 938 | 4 | 96 | 96 | 00 | 4,647 | 6 | 94 | 93 | 1 |
| Oils - Vegetable and Animal | 851 | 23 | 77 | 32 | 45 | 4,348 | 31 | 69 | 44 | 25 |
| Manufactured Food | 1,828 | 11 | 89 | 69 | 20 | 30,612 | 48 | 52 | 27 | 25 |
| Textiles and Leather | 2,691 | 47 | 53 | 37 | 16 | 3,709 | 43 | 57 | 28 | 29 |
| V AUXILIARIES | 40,912 | 70 | 30 | 22 | 8 | 179,825 | 65 | 35 | 13 | 22 |
| Petroleum and Products | 28,671 | 90 | 10 | 8 | 02 | 93,192 | 83 | 17 | 4 | 13 |
| Building Materials | 1,534 | 29 | 71 | 62 | 09 | 19,768 | 65 | 35 | 16 | 19 |
| Chemicals | 1,464 | 51 | 49 | 35 | 14 | 12,990 | 45 | 55 | 23 | 32 |
| Miscellaneous | 9,243 | 35 | 65 | 44 | 21 | 53,875 | 40 | 60 | 26 | 34 |
| VI ACCESSORIES | 13,256 | 11 | 89 | 56 | 33 | 137,650 | 47 | 53 | 23 | 30 |
| Iron and Steel | 6,457 | 13 | 87 | 61 | 26 | 110,555 | 54 | 46 | 15 | 31 |
| Other Metals | 677 | 37 | 63 | 25 | 38 | 2,318 | 37 | 63 | 50 | 13 |
| Appliances | 5,610 | 04 | 96 | 41 | 55 | 18,558 | 18 | 82 | 49 | 33 |
| Glass and Tile | 512 | 10 | 90 | 81 | 09 | 6,219 | 39 | 61 | 34 | 27 |
| | CENTRAL | | | | | | | | | |
| ALL COMMODITIES | $ 981,511 | 41% | 59% | 37% | 22% | | | | | |
| I ROUGH MATERIAL | 17,000 | 72 | 28 | 10 | 18 | | | | | |
| Sand, Stone and Gravel | 17,000 | 72 | 28 | 10 | 18 | | | | | |
| II RAW MATERIAL | 376,021 | 43 | 57 | 48 | 9 | | | | | |
| Bulk Grain and Beets | 56,321 | 66 | 34 | 15 | 19 | | | | | |
| Perishables | 8,678 | 4 | 96 | 92 | 4 | | | | | |
| Live Animals | 41,808 | 33 | 67 | 44 | 23 | | | | | |
| Coal and Coke | 243,164 | 53 | 47 | 40 | 7 | | | | | |
| Ores | 9,494 | 33 | 67 | 37 | 30 | | | | | |
| Sulphur and Sulphuric Acid | 3,806 | 35 | 65 | 45 | 20 | | | | | |
| Forest Products | 12,747 | 11 | 89 | 81 | 8 | | | | | |
| III SEMIPROCESSED MATERIAL | 25,816 | 29 | 71 | 37 | 34 | | | | | |
| Cotton, Hay and Tobacco | 8,641 | 20 | 80 | 35 | 45 | | | | | |
| Paper and Products | 17,175 | 32 | 68 | 39 | 29 | | | | | |
| IV NECESSARIES | 145,949 | 23 | 77 | 36 | 41 | | | | | |
| Cereals | 26,735 | 21 | 79 | 32 | 47 | | | | | |
| Miscellaneous Farm Products | 14,151 | 23 | 77 | 60 | 17 | | | | | |
| Edible Animal Products | 57,508 | 20 | 80 | 28 | 52 | | | | | |
| Oils - Vegetable and Animal | 3,993 | 25 | 75 | 54 | 21 | | | | | |
| Manufactured Food | 41,093 | 31 | 69 | 30 | 39 | | | | | |
| Textiles and Leather | 2,469 | 15 | 85 | 53 | 32 | | | | | |
| V AUXILIARIES | 190,000 | 52 | 48 | 30 | 18 | | | | | |
| Petroleum and Products | 98,275 | 65 | 35 | 28 | 7 | | | | | |
| Building Materials | 18,974 | 56 | 44 | 15 | 29 | | | | | |
| Chemicals | 14,607 | 23 | 77 | 51 | 26 | | | | | |
| Miscellaneous | 58,144 | 30 | 70 | 28 | 42 | | | | | |
| VI ACCESSORIES | 226,725 | 37 | 63 | 14 | 49 | | | | | |
| Iron and Steel | 113,055 | 50 | 50 | 18 | 32 | | | | | |
| Other Metals | 4,202 | 20 | 80 | 40 | 40 | | | | | |
| Appliances | 98,228 | 18 | 82 | 5 | 77 | | | | | |
| Glass and Textiles | 11,240 | 39 | 61 | 17 | 44 | | | | | |

Analysis 16.10 Comparative Statement of Revenues of Intraterritorial and Interterritorial Traffic of Southern District Territories - December 13, 1933

| | POCAHONTAS | | | | | SOUTHEASTERN | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | PERCENTAGE OF AGGREGATE REVENUE | | | | | PERCENTAGE OF AGGREGATE REVENUE | | | |
| | AGGREGATE REVENUE | INTRA-DISTRICT | INTERDISTRICT TOTAL | INBOUND | OUTBOUND | AGGREGATE REVENUE | INTRA-DISTRICT | INTERDISTRICT TOTAL | INBOUND | OUTBOUND |
| ALL COMMODITIES | $ 459,491 | 37% | 63% | 15% | 48% | $ 693,368 | 51% | 49% | 21% | 28% |
| I ROUGH MATERIAL | 5,567 | 44 | 56 | 22 | 34 | 27,151 | 90 | 10 | 4 | 6 |
| Sand, Stone and Gravel | 5,567 | 44 | 56 | 22 | 34 | 27,151 | 90 | 10 | 4 | 6 |
| II RAW MATERIAL | 384,929 | 41 | 59 | 6 | 53 | 401,789 | 45 | 55 | 13 | 42 |
| Bulk Grain and Beets | 435 | 10 | 90 | 83 | 7 | 3,742 | 29 | 71 | 70 | 1 |
| Perishibles | 4,873 | 2 | 98 | 72 | 26 | 105,786 | 18 | 82 | 24 | 58 |
| Live Animals | 2,556 | - | 100 | 58 | 42 | 8,194 | 57 | 43 | 20 | 23 |
| Coal and Coke | 360,009 | 44 | 56 | 2 | 54 | 170,587 | 51 | 49 | 6 | 43 |
| Ores | 1,838 | 45 | 55 | 22 | 33 | 12,703 | 57 | 43 | 6 | 37 |
| Sulphur and Sulphuric Acid | 1,403 | 36 | 64 | 47 | 17 | 27,150 | 88 | 12 | 2 | 10 |
| Forest Products | 13,815 | 36 | 64 | 20 | 44 | 73,627 | 48 | 52 | 10 | 42 |
| III SEMIPROCESSED MATERIAL | 8,282 | 43 | 57 | 34 | 23 | 31,286 | 55 | 45 | 27 | 18 |
| Cotton, Hay and Tobacco | 4,522 | 57 | 43 | 35 | 8 | 25,184 | 62 | 38 | 22 | 16 |
| Paper and Products | 3,760 | 10 | 90 | 31 | 59 | 6,102 | 33 | 67 | 43 | 24 |
| IV NECESSARIES | 9,455 | 7 | 93 | 70 | 23 | 84,320 | 42 | 58 | 40 | 18 |
| Cereals | 1,044 | 15 | 85 | 77 | 8 | 8,002 | 41 | 59 | 56 | 03 |
| Miscellaneous Farm Products | 3,488 | 10 | 90 | 61 | 29 | 22,212 | 55 | 45 | 14 | 31 |
| Edible Animal Products | 514 | - | 100 | 94 | 06 | 4,198 | 10 | 90 | 85 | 5 |
| Oils - Vegetable and Animal | 794 | 10 | 90 | 58 | 32 | 17,089 | 78 | 22 | 9 | 13 |
| Manufactured Food | 2,143 | 2 | 98 | 64 | 34 | 19,681 | 41 | 59 | 35 | 24 |
| Textiles and Leather | 1,472 | 13 | 87 | 21 | 66 | 13,108 | 45 | 55 | 17 | 38 |
| V AUXILIARIES | 31,532 | 29 | 71 | 30 | 41 | 106,975 | 69 | 31 | 18 | 13 |
| Petroleum and Products | 15,260 | 43 | 57 | 23 | 34 | 67,890 | 80 | 20 | 17 | 03 |
| Building Materials | 2,146 | 47 | 53 | 32 | 21 | 12,335 | 73 | 27 | 20 | 07 |
| Chemicals | 3,468 | 8 | 92 | 27 | 65 | 9,164 | 26 | 74 | 24 | 50 |
| Miscellaneous | 10,658 | 11 | 89 | 39 | 50 | 17,586 | 29 | 71 | 22 | 49 |
| VI ACCESSORIES | 19,726 | 10 | 90 | 38 | 52 | 41,847 | 37 | 63 | 37 | 26 |
| Iron and Steel | 10,440 | 13 | 87 | 26 | 61 | 31,038 | 44 | 56 | 23 | 33 |
| Other Metals | 867 | - | 100 | 21 | 79 | 960 | - | 100 | 23 | 77 |
| Appliances | 1,415 | 2 | 98 | 83 | 15 | 9,177 | 29 | 71 | 59 | 12 |
| Glass and Tile | 7,004 | 11 | 89 | 16 | 73 | 672 | 28 | 72 | 65 | 7 |



Analysis 16.11 Comparative Statement of Revenues of Intraterritorial and Interterritorial Traffic - of Western District Territories - December 13, 1933

| | WESTERN TRUNK LINE | | | | | PACIFIC NORTHWEST | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | PERCENTAGE OF AGGREGATE REVENUE | | | | | PERCENTAGE OF AGGREGATE REVENUE | | | |
| | AGGREGATE REVENUE | INTRA-DISTRICT | INTERDISTRICT TOTAL | INBOUND | OUTBOUND | AGGREGATE REVENUE | INTRA-DISTRICT | INTERDISTRICT TOTAL | INBOUND | OUTBOUND |
| ALL COMMODITIES | $ 853,348 | 45% | 55% | 27% | 28% | $ 373,512 | 42% | 58% | 12% | 46% |
| I ROUGH MATERIAL | 7,942 | 90 | 10 | 6 | 4 | 1,107 | 75 | 25 | - | 25 |
| Sand, Stone and Gravel | 7,942 | 90 | 10 | 6 | 4 | 1,107 | 75 | 25 | - | 25 |
| II RAW MATERIAL | 396,533 | 55 | 45 | 28 | 17 | 285,122 | 41 | 59 | 8 | 51 |
| Bulk Grain and Beets | 162,709 | 84 | 16 | 3 | 13 | 52,549 | 88 | 12 | 3 | 9 |
| Perishables | 25,789 | 11 | 89 | 72 | 17 | 109,598 | 15 | 85 | 7 | 78 |
| Live Animals | 101,623 | 42 | 58 | 12 | 46 | 13,698 | 26 | 74 | 15 | 59 |
| Coal and Coke | 77,519 | 61 | 39 | 37 | 2 | 17,725 | 50 | 50 | 35 | 15 |
| Ores | 3,402 | 2 | 98 | 64 | 34 | 6,447 | 71 | 29 | 4 | 25 |
| Sulphur and Sulphuric Acid | 1,952 | 15 | 85 | 49 | 36 | 727 | - | 100 | 62 | 38 |
| Forest Products | 23,539 | 25 | 75 | 59 | 16 | 84,678 | 26 | 74 | 1 | 73 |
| III SEMIPROCESSED MATERIAL | 19,964 | 36 | 64 | 34 | 30 | 6,217 | 23 | 77 | 27 | 50 |
| Cotton, Hay and Tobacco | 8,914 | 62 | 38 | 21 | 17 | 1,309 | 48 | 52 | 26 | 26 |
| Paper and Products | 11,050 | 13 | 87 | 44 | 43 | 4,908 | 15 | 85 | 27 | 58 |
| IV NECESSARIES | 315,425 | 28 | 72 | 10 | 62 | 39,353 | 40 | 60 | 13 | 47 |
| Cereals | 55,409 | 32 | 68 | 03 | 66 | 7,684 | 79 | 21 | 9 | 12 |
| Miscellaneous Farm Products | 6,853 | 17 | 83 | 62 | 21 | 11,958 | 10 | 90 | 2 | 88 |
| Edible Animal Products | 193,706 | 6 | 94 | - | 94 | 6,091 | 20 | 80 | 14 | 66 |
| Oils - Vegetable and Animal | 2,086 | 28 | 72 | 64 | 08 | 1,392 | 21 | 79 | 33 | 46 |
| Manufactured Food | 53,574 | 66 | 34 | 17 | 17 | 12,229 | 43 | 57 | 17 | 40 |
| Textiles and Leather | 3,797 | 51 | 49 | 34 | 15 | 219 | 32 | 68 | 68 | - |
| V AUXILIARIES | 88,218 | 47 | 53 | 42 | 11 | 35,578 | 58 | 42 | 16 | 26 |
| Petroleum and Products | 57,422 | 52 | 48 | 44 | 4 | 30,115 | 67 | 33 | 3 | 30 |
| Building Materials | 13,843 | 61 | 39 | 14 | 25 | 2,511 | 78 | 22 | 16 | 6 |
| Chemicals | 2,179 | 31 | 69 | 50 | 19 | 258 | 17 | 83 | 83 | - |
| Miscellaneous | 14,774 | 18 | 82 | 53 | 29 | 2,394 | 10 | 90 | 68 | 22 |
| VI ACCESSORIES | 25,266 | 15 | 85 | 57 | 28 | 5,835 | 28 | 72 | 62 | 10 |
| Iron and Steel | 10,548 | 13 | 87 | 63 | 24 | 1,253 | 26 | 74 | 73 | 1 |
| Other Metals | 879 | 31 | 69 | 32 | 37 | 1,561 | 46 | 54 | 22 | 32 |
| Appliances | 12,657 | 15 | 85 | 45 | 40 | 2,266 | 15 | 85 | 71 | 14 |
| Glass and Tile | 1,182 | 21 | 79 | 74 | 5 | 755 | 97 | 03 | - | 3 |

| | SOUTHWESTERN | | | | | PACIFIC SOUTHWEST | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | $ 531,674 | 46% | 54% | 22% | 32% | $ 487,268 | 35% | 65% | 22% | 43% |
| I ROUGH MATERIAL | 14,869 | 94 | 6 | 2 | 4 | 3,698 | 98 | 2 | 2 | - |
| Sand, Stone and Gravel | 14,869 | 94 | 6 | 2 | 4 | 3,698 | 98 | 2 | 2 | - |
| II RAW MATERIAL | 143,726 | 35 | 65 | 31 | 34 | 350,293 | 29 | 71 | 11 | 60 |
| Bulk Grain and Beets | 17,283 | 64 | 36 | 14 | 22 | 6,823 | 36 | 64 | 54 | 10 |
| Perishables | 26,034 | 4 | 96 | 70 | 26 | 218,941 | 4 | 96 | 4 | 92 |
| Live Animals | 21,964 | 44 | 56 | 2 | 54 | 23,516 | 59 | 41 | 31 | 10 |
| Coal and Coke | 23,267 | 37 | 63 | 16 | 47 | 43,067 | 68 | 32 | 5 | 27 |
| Ores | 6,399 | 47 | 53 | 12 | 41 | 9,863 | 91 | 9 | 3 | 6 |
| Sulphur and Sulphuric Acid | 4,539 | 72 | 28 | 10 | 18 | 1,458 | 67 | 33 | 16 | 17 |
| Forest Products | 41,280 | 56 | 44 | 8 | 36 | 15,685 | 42 | 58 | 26 | 32 |
| III SEMIPROCESSED MATERIAL | 56,776 | 82 | 18 | 6 | 12 | 9,307 | 82 | 18 | 9 | 9 |
| Cotton, Hay and Tobacco | 54,305 | 87 | 13 | 1 | 12 | 8,146 | 88 | 12 | 1 | 11 |
| Paper and Products | 2,471 | 13 | 87 | 63 | 24 | 1,161 | 60 | 40 | 40 | - |
| IV NECESSARIES | 74,827 | 39 | 61 | 27 | 34 | 64,168 | 26 | 74 | 33 | 41 |
| Cereals | 11,876 | 67 | 33 | 18 | 15 | 3,040 | 44 | 56 | 37 | 19 |
| Miscellaneous Farm Products | 13,767 | 40 | 60 | 15 | 45 | 25,047 | 21 | 79 | 6 | 73 |
| Edible Animal Products | 14,297 | 15 | 85 | 33 | 52 | 3,770 | 4 | 96 | 81 | 15 |
| Oils - Vegetable and Animal | 14,371 | 61 | 39 | 2 | 37 | 6,674 | 51 | 49 | 14 | 35 |
| Manufactured Food | 19,500 | 25 | 75 | 44 | 31 | 25,122 | 32 | 68 | 30 | 38 |
| Textiles and Leather | 1,016 | 35 | 65 | 36 | 29 | 515 | - | 100 | 47 | 53 |
| V AUXILIARIES | 221,423 | 48 | 52 | 7 | 45 | 51,651 | 72 | 28 | 19 | 9 |
| Petroleum and Products | 183,047 | 48 | 52 | 3 | 49 | 28,213 | 84 | 16 | 9 | 7 |
| Building Materials | 14,898 | 73 | 27 | 14 | 13 | 11,114 | 94 | 6 | 3 | 3 |
| Chemicals | 11,102 | 6 | 94 | 23 | 71 | 2,033 | 28 | 72 | 31 | 41 |
| Miscellaneous | 12,376 | 41 | 59 | 32 | 27 | 10,289 | 39 | 61 | 47 | 14 |
| VI ACCESSORIES | 20,053 | 23 | 77 | 64 | 13 | 8,151 | 13 | 87 | 81 | 6 |
| Iron and Steel | 9,346 | 23 | 77 | 68 | 9 | 5,744 | 23 | 77 | 68 | 9 |
| Other Metals | 1,427 | 25 | 75 | 12 | 63 | 265 | 40 | 60 | - | 60 |
| Appliances | 4,938 | 23 | 77 | 70 | 7 | 1,521 | 4 | 96 | 93 | 3 |
| Glass and Tile | 4,342 | 21 | 79 | 21 | 58 | 621 | 51 | 49 | 49 | - |

SECTION 20. PRESENT SPEEDS

Analysis 20.1 Shippers Comparison of Typical Competitive Movements

OVERALL SPEED IN MILES PER HOUR

| ORIGIN STATE | UNDER 51 | | 51 - 100 | | 101 - 200 | | 201 - 300 | | 301 - 500 | | OVER 500 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY |
| UNITED STATES - TOTAL | 1 | 8 | 2 | 9 | 4 | 12 | 6 | 15 | 7 | 15 | 9 | 15 |
| NEW ENGLAND - TOTAL | 1 | 8 | 3 | 8 | 3 | 9 | 5 | 15 | 6 | 13 | 11 | 15 |
| Maine | 1 | 12 | 2 | 6 | 4 | 7 | 7 | 17 | 10 | 24 | - | - |
| New Hampshire | 1 | 3 | 2 | 6 | 2 | 6 | 8 | 21 | - | - | - | - |
| Vermont | 1 | 9 | - | - | 3 | 9 | 4 | 16 | - | - | 13 | 16 |
| Massachusetts | 1 | 8 | 3 | 9 | 3 | 10 | 5 | 16 | 6 | 11 | 11 | 15 |
| Rhode Island | 1 | 8 | 2 | 16 | - | - | 3 | 15 | 4 | 11 | - | - |
| Connecticut | 1 | 11 | 3 | 10 | 4 | 9 | 4 | 9 | - | - | 10 | 13 |
| TRUNK LINE - TOTAL | 1 | 6 | 2 | 8 | 3 | 10 | 4 | 11 | 5 | 14 | 6 | 11 |
| New York | 1 | 5 | 2 | 9 | 3 | 10 | 5 | 12 | 5 | 14 | 6 | 10 |
| New Jersey | 1 | 7 | 2 | 10 | 4 | 11 | 4 | 11 | 7 | 14 | - | - |
| Pennsylvania | 1 | 7 | 2 | 7 | 3 | 10 | 4 | 12 | 6 | 15 | 7 | 15 |
| Delaware | 1 | 10 | 1 | 4 | 6 | 14 | - | - | - | - | - | - |
| Maryland | 1 | 9 | 4 | 13 | 4 | 11 | 3 | 7 | - | - | - | - |
| District of Columbia | - | - | - | - | - | - | - | - | - | - | - | - |
| CENTRAL - TOTAL | 1 | 9 | 3 | 11 | 4 | 13 | 6 | 15 | 7 | 14 | 9 | 13 |
| Ohio | 1 | 9 | 3 | 11 | 3 | 12 | 6 | 15 | 6 | 12 | 7 | 12 |
| Michigan | 1 | 9 | 3 | 10 | 5 | 13 | 5 | 14 | 7 | 12 | 10 | 12 |
| Indiana | 1 | 9 | 2 | 12 | 4 | 14 | 6 | 15 | 7 | 17 | 9 | 11 |
| Illinois | 2 | 10 | 3 | 10 | 6 | 14 | 8 | 17 | 9 | 15 | 10 | 14 |
| SOUTHEASTERN - TOTAL | 1 | 12 | 2 | 14 | 5 | 15 | 4 | 13 | 6 | 13 | 7 | 13 |
| Virginia | 2 | 20 | 2 | 10 | 4 | 15 | 3 | 13 | 14 | 20 | 19 | 19 |
| West Virginia | 1 | 10 | - | - | 3 | 17 | 5 | 19 | 6 | 8 | 8 | 20 |
| Kentucky | - | - | 2 | 13 | 4 | 19 | 6 | 18 | 6 | 14 | - | - |
| North Carolina | 1 | 9 | 2 | 12 | 5 | 16 | 4 | 12 | 4 | 11 | 6 | 14 |
| South Carolina | - | - | 4 | 24 | 4 | 21 | 5 | 23 | 7 | 22 | 7 | 13 |
| Tennessee | 1 | 9 | 3 | 16 | 5 | 10 | 4 | 11 | 6 | 15 | 7 | 10 |
| Georgia | 1 | 10 | 1 | 18 | 10 | 22 | 10 | 12 | 10 | 15 | 7 | 12 |
| Alabama | 1 | 10 | 4 | 13 | 5 | 16 | - | - | 7 | 20 | - | - |
| Mississippi | 3 | 18 | - | - | 6 | 18 | - | - | 6 | 28 | - | - |
| Florida | 2 | 20 | 4 | 25 | 7 | 23 | 12 | 11 | - | - | 15 | 30 |
| WESTERN TRUNK LINE - TOTAL | 1 | 10 | 3 | 12 | 6 | 14 | 9 | 19 | 9 | 17 | 11 | 24 |
| Wisconsin | 1 | 11 | 3 | 10 | 5 | 13 | 8 | 18 | 7 | 18 | 9 | 12 |
| Minnesota | 1 | 10 | 4 | 14 | 6 | 15 | 13 | 32 | 11 | 22 | 6 | 11 |
| Iowa | 1 | 8 | 6 | 21 | 6 | 16 | 9 | 17 | 9 | 14 | 9 | 21 |
| Missouri | 1 | 7 | 3 | 8 | 8 | 16 | 9 | 18 | 9 | 15 | 11 | 12 |
| North Dakota | - | - | - | - | - | - | - | - | - | - | - | - |
| South Dakota | 3 | 8 | - | - | - | - | - | - | - | - | 22 | 32 |
| Nebraska | 1 | 17 | 2 | 19 | 5 | 12 | 14 | 20 | 9 | 16 | 12 | 15 |
| Kansas | - | - | 3 | 8 | 7 | 17 | 6 | 17 | 12 | 20 | 13 | 21 |
| SOUTHWESTERN - TOTAL | 2 | 18 | 5 | 20 | 5 | 20 | 7 | 20 | 8 | 17 | 13 | 20 |
| Arkansas | 2 | 12 | 4 | 16 | 7 | 18 | 11 | 23 | 9 | 23 | 20 | 25 |
| Louisiana | 1 | 12 | 4 | 17 | 5 | 19 | 12 | 15 | - | - | - | - |
| Oklahoma | 1 | 22 | - | - | 7 | 25 | 7 | 19 | 12 | 21 | 11 | 19 |
| Texas | 4 | 20 | 6 | 22 | 5 | 19 | 7 | 21 | 5 | 13 | 13 | 17 |
| PACIFIC NORTHWEST - TOTAL | 1 | 14 | 2 | 9 | 7 | 19 | 4 | 13 | 8 | 17 | 13 | 22 |
| Wyoming | - | - | - | - | - | - | - | - | - | - | - | - |
| Montana | - | - | - | - | 5 | 25 | 5 | 28 | - | - | - | - |
| Idaho | 1 | 24 | 3 | 10 | 3 | 18 | - | - | - | - | 13 | 25 |
| Washington | - | - | 4 | 16 | 11 | 18 | 4 | 11 | 7 | 14 | - | - |
| Oregon | 1 | 9 | 2 | 8 | 12 | 19 | - | - | 10 | 21 | 14 | 20 |
| PACIFIC SOUTHWEST - TOTAL | 2 | 10 | 3 | 8 | 6 | 15 | 8 | 17 | 10 | 18 | 11 | 19 |
| Colorado | 2 | 12 | 4 | 11 | 8 | 19 | 10 | 10 | 9 | 21 | 12 | 19 |
| New Mexico | - | - | - | - | 5 | 8 | - | - | - | - | - | - |
| Utah | - | - | - | - | 12 | 23 | 7 | 17 | 12 | 26 | 14 | 23 |
| Arizona | - | - | - | - | - | - | 10 | 30 | - | - | - | - |
| Nevada | - | - | - | - | - | - | - | - | - | - | - | - |
| California | 2 | 10 | 3 | 8 | 6 | 15 | 9 | 17 | 10 | 18 | 10 | 18 |



SECTION 20. PRESENT SPEEDS

Analysis 20.2 Comparative Overall Speeds of Transport Agencies

LENGTH OF HAUL*

| ELAPSED HOURS | UNITED STATES | | EAST | | SOUTH | | NORTHWEST | | SOUTHWEST | |
|---|---|---|---|---|---|---|---|---|---|---|
| | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY | RAIL-WAY | HIGH-WAY |
| 6 | 7 | 56 | 7 | 45 | 7 | 97 | 9 | 97 | 11 | 61 |
| 12 | 13 | 149 | 13 | 132 | 14 | 185 | 17 | 178 | 23 | 232 |
| 18 | 20 | 263 | 20 | 247 | 21 | 235 | 26 | 325 | 70 | 349 |
| 24 | 24 | 356 | 26 | 330 | 27 | 313 | 60 | 409 | 135 | 418 |
| 30 | 34 | 445 | 33 | 412 | 75 | 395 | 242 | 706 | 169 | 523 |
| 36 | 149 | 534 | 82 | 494 | 167 | 474 | 290 | 847 | 261 | 689 |
| 42 | 240 | 644 | 153 | 584 | 187 | 550 | 383 | 988 | 304 | 804 |
| 48 | 275 | 736 | 259 | 621 | 214 | 629 | 437 | 1,129 | 402 | 919 |
| 54 | 377 | 828 | 291 | 698 | 239 | 707 | 498 | 1,271 | 453 | 1,034 |
| 60 | 419 | 920 | 380 | 776 | 350 | 786 | 663 | 1,412 | 503 | 1,149 |
| 66 | 758 | 1,012 | 418 | 853 | 385 | 865 | 729 | 1,553 | 781 | 1,264 |
| 72 | 827 | 1,104 | 456 | 931 | 420 | 943 | 796 | 1,694 | 852 | 1,379 |
| 78 | 895 | 1,197 | 659 | 1,009 | 547 | 1,022 | 862 | 1,835 | 924 | 1,494 |

ELAPSED HOURS

| MILEAGE RANGE | UNITED STATES | EAST | SOUTH | NORTH-WEST | SOUTH-WEST |
|---|---|---|---|---|---|
| Under 50 miles | | | | | |
| Average Haul | 33 | 33 | 31 | 31 | 32 |
| Highway | 4 | 4 | 3 | 3 | 3 |
| Railway | 28 | 30 | 26 | 22 | 17 |
| Between 50 and 100 miles | | | | | |
| Average Haul | 80 | 80 | 78 | 82 | 79 |
| Highway | 9 | 9 | 5 | 7 | 8 |
| Railway | 33 | 35 | 31 | 24 | 20 |
| Between 100 and 200 miles | | | | | |
| Average Haul | 156 | 157 | 149 | 155 | 154 |
| Highway | 13 | 14 | 10 | 10 | 9 |
| Railway | 38 | 43 | 32 | 26 | 27 |
| Between 200 and 300 miles | | | | | |
| Average Haul | 259 | 260 | 255 | 261 | 253 |
| Highway | 18 | 19 | 20 | 14 | 13 |
| Railway | 45 | 48 | 58 | 33 | 35 |
| Between 300 and 500 miles | | | | | |
| Average Haul | 396 | 393 | 373 | 399 | 414 |
| Highway | 27 | 28 | 29 | 23 | 24 |
| Railway | 57 | 63 | 64 | 44 | 49 |
| Over 500 miles | | | | | |
| Average Haul | 781 | 767 | 674 | 813 | 875 |
| Highway | 51 | 59 | 52 | 35 | 46 |
| Railway | 85 | 91 | 96 | 74 | 74 |

* From information received in response to Shippers' Inquiry Exhibit 014.

SECTION 20. PRESENT SPEEDS

Analysis 20.3 Speed of Railway Service

| COMMODITY GROUP | AVERAGE HAUL MILES | AVERAGE TIME DAYS | MILES PER HOUR CARRIER OVERALL | MILES PER HOUR CARRIER TOTAL | MILES PER HOUR CARRIER ROAD | DISTRIBUTION OF OPERATIVE TIME# LOADING | ORIGIN | DESTINATION | OTHER | UNLOADING | ROAD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 376 | 6 | 3 | 5 | 16 | 23 | 8 | 10 | 19 | 24 | 16 |
| I ROUGH MATERIAL* | 127 | 5 | 1 | 2 | 11 | 26 | 11 | 9 | 16 | 28 | 10 |
| Sand, Stone and Gravel | 127 | 5 | 1 | 2 | 11 | 26 | 11 | 9 | 16 | 28 | 10 |
| II RAW MATERIAL* | 365 | 7 | 2 | 4 | 16 | 25 | 7 | 11 | 19 | 23 | 15 |
| Bulk Grain and Beets | 224 | 6 | 2 | 3 | 14 | 14 | 10 | 23 | 16 | 26 | 11 |
| Perishables | 1400 | 9 | 7 | 10 | 20 | 10 | 3 | 6 | 23 | 25 | 33 |
| Live Animals | 405 | 2 | 8 | 10 | 20 | 18 | 7 | 5 | 24 | 7 | 39 |
| Coal and Coke | 249 | 7 | 1 | 3 | 13 | 30 | 7 | 10 | 19 | 23 | 11 |
| Ores | 179 | 4 | 2 | 3 | 15 | 23 | 8 | 15 | 16 | 26 | 12 |
| Sulphur and Sulphuric Acid | 182 | 6 | 1 | 3 | 15 | 14 | 7 | 7 | 13 | 51 | 8 |
| Forest Products | 376 | 7 | 2 | 4 | 15 | 22 | 10 | 11 | 18 | 23 | 16 |
| III SEMIPROCESSED MATERIAL* | 344 | 6 | 3 | 4 | 16 | 20 | 10 | 13 | 20 | 21 | 16 |
| Cotton, Hay and Tobacco | 289 | 4 | 2 | 4 | 15 | 17 | 11 | 14 | 21 | 21 | 16 |
| Paper and Products | 442 | 6 | 3 | 5 | 17 | 24 | 9 | 11 | 19 | 20 | 17 |
| IV NECESSARIES* | 550 | 5 | 4 | 7 | 19 | 19 | 8 | 10 | 18 | 22 | 23 |
| Cereals | 435 | 6 | 3 | 6 | 18 | 20 | 10 | 9 | 19 | 24 | 18 |
| Miscellaneous Farm Products | 469 | 6 | 3 | 6 | 18 | 18 | 8 | 11 | 16 | 28 | 19 |
| Edible Animal Products | 918 | 5 | 8 | 11 | 22 | 14 | 5 | 7 | 21 | 17 | 36 |
| Oils-Vegetable and Animal | 370 | 6 | 3 | 5 | 16 | 24 | 9 | 11 | 16 | 24 | 16 |
| Manufactured Food | 468 | 5 | 4 | 7 | 18 | 18 | 7 | 13 | 19 | 22 | 21 |
| Textiles and Leather | 376 | 5 | 3 | 5 | 13 | 19 | 8 | 10 | 17 | 21 | 25 |
| V AUXILIARIES* | 313 | 5 | 3 | 5 | 16 | 22 | 9 | 9 | 19 | 25 | 16 |
| Petroleum and Products | 272 | 4 | 3 | 5 | 16 | 22 | 9 | 9 | 19 | 25 | 16 |
| Building Materials | 258 | 4 | 2 | 4 | 15 | 22 | 7 | 8 | 20 | 29 | 14 |
| Chemicals | 506 | 6 | 3 | 6 | 17 | 18 | 8 | 9 | 22 | 24 | 19 |
| Miscellaneous | 454 | 6 | 3 | 6 | 17 | 20 | 9 | 10 | 18 | 23 | 18 |
| VI ACCESSORIES* | 427 | 6 | 3 | 6 | 18 | 23 | 8 | 9 | 19 | 22 | 17 |
| Iron and Steel | 316 | 6 | 2 | 4 | 16 | 27 | 9 | 10 | 18 | 23 | 13 |
| Other Metals | 468 | 6 | 3 | 5 | 17 | 21 | 8 | 7 | 25 | 21 | 18 |
| Appliances | 746 | 6 | 5 | 8 | 20 | 24 | 7 | 7 | 21 | 16 | 25 |
| Glass and Tile | 425 | 6 | 3 | 5 | 16 | 22 | 7 | 8 | 22 | 23 | 18 |

* Where commodities of two groups have been combined, the total is placed under the groups in which the predominant commodity falls.

# Percentage of car days from time car set for loading until released by consignee after unloading based on test made of all cars terminating on December 13, 1933.



SECTION 20. PRESENT SPEEDS

Analysis 20.4 Artificial Restrictions of Railway Speed

| BETWEEN | AND | NUMBER OF CARRIERS | TRAFFIC COVERED | AGREED SCHEDULE HOURS | MILEAGE SHORT ROUTE | MILEAGE LONG ROUTE | OVERALL SPEED MILES PER HOUR SHORT ROUTE | OVERALL SPEED MILES PER HOUR LONG ROUTE |
|---|---|---|---|---|---|---|---|---|
| EASTERN DISTRICT | | | | | | | | |
| New York, N.Y. | Chicago,Ill. | 8 | CL&LCL | 53 | 908 | 997 | 21 | 22 |
| Chicago, Ill. | New York, N.Y. | 8 | CL&LCL | 53 | 908 | 997 | 21 | 22 |
| SOUTHERN DISTRICT | | | | | | | | |
| None reported | | | | | | | | |
| WESTERN DISTRICT | | | | | | | | |
| EASTBOUND FROM PACIFIC COAST | | | | | | | | |
| Imperial Valley,Cal. | Memphis,Tenn. | 4 | CL Per* | 114 | 1,804 | 2,034 | 14 | 18 |
| Imperial Valley,Cal. | St.Louis,Mo. | 7 | CL Per | 113 | 1,895 | 2,030 | 17 | 18 |
| Imperial Valley,Cal. | Kansas City, Mo. | 4 | CL Per | 102 | 1,557 | 1,764 | 15 | 18 |
| Imperial Valley,Cal. | Chicago, Ill. | 8 | CL Per | 121 | 1,955 | 2,593 | 16 | 22 |
| Colton & San Bernardino,Cal. | Memphis,Tenn. | 4 | CL Per | 117 | 1,914 | 2,114 | 14 | 18 |
| Colton & San Bernardino,Cal. | St.Louis,Mo. | 7 | CL Per | 103 | 2,002 | 2,414 | 16 | 24 |
| Colton & San Bernardino,Cal. | Kansas City,Mo. | 4 | CL Per | 116 | 1,692 | 1,984 | 15 | 17 |
| Colton & San Bernardino,Cal. | Chicago,Ill. | 8 | CL Per | 124 | 2,140 | 2,459 | 17 | 20 |
| Bakersfield,Cal. | Kansas City,Mo. | 6 | CL Per | 120 | 1,749 | 2,025 | 15 | 17 |
| Bakersfield,Cal. | Chicago,Ill. | 7 | CL Per | 124 | 2,153 | 2,440 | 18 | 20 |
| Northern,California | Kansas City,Mo. | 7 | CL Per | 102 | 1,781 | 2,230 | 18 | 22 |
| Northern,California | Chicago,Ill. | 8 | CL Per | 124 | 2,134 | 2,747 | 18 | 22 |
| Yuma, Ariz. | St.Louis,Mo. | 7 | CL Per | 105 | 1,810 | 2,213 | 17 | 21 |
| Phoenix, Ariz. | Memphis,Tenn. | 4 | CL Per | 93 | 1,589 | 1,820 | 17 | 20 |
| Phoenix, Ariz. | St.Louis,Mo. | 7 | CL Per | 92 | 1,680 | 2,080 | 18 | 23 |
| Phoenix, Ariz. | Kansas City,Mo. | 4 | CL Per | 79 | 1,337 | 1,549 | 17 | 20 |
| Phoenix, Ariz. | Chicago,Ill. | 8 | CL Per | 108 | 1,805 | 2,364 | 17 | 23 |
| Nogales, Ariz. | Kansas City,Mo. | 3 | CL Per | 84 | 1,326 | 1,369 | 16 | 16 |
| Nogales, Ariz. | Chicago,Ill. | 3 | CL Per | 113 | 1,818 | 1,836 | 16 | 16 |
| Portland, Ore. | Seattle,Wash. | 3 | CL | 12 | 178 | 187 | 15 | 15 |
| Seattle,Wash. | Portland,Ore. | 3 | CL | 11 | 178 | 187 | 17 | 18 |
| Portland,Ore. | Kansas City,Mo. | 5 | CL Per | 124 | 1,890 | 2,173 | 15 | 18 |
| Portland,Ore.-Seattle,Wash. | Minneapolis-St.Paul,Minn. | 3 | CL&LCL | 120 | 1,755 | 1,904 | 15 | 16 |
| Northwest Pacific Coast, | Chicago,Ill. | 4 | CL&LCL | 144 | 2,173 | 2,568 | 15 | 18 |
| Spokane,Wash. | Kansas City,Mo. | 4 | CL | 121 | 1,651 | 1,901 | 14 | 16 |
| Spokane,Wash. | Chicago,Ill. | 6 | CL&LCL | 151 | 1,866 | 2,273 | 12 | 15 |
| WESTBOUND TO PACIFIC COAST | | | | | | | | |
| Kansas City-St.Louis,Mo. | Los Angeles,Cal. | 4 | CL | 107 | 1,746 | 1,927 | 16 | 18 |
| Kansas City-St.Louis,Mo. | Los Angeles,Cal. | 7 | CL&LCL | 123 | 1,761 | 2,041 | 14 | 17 |
| Kansas City-St.Louis,Mo. | San Francisco,Cal. | 7 | CL | 124 | 1,893 | 2,228 | 15 | 18 |
| Chicago,Ill. | Los Angeles,Cal. | 8 | CL&LCL | 146 | 2,210 | 2,388 | 15 | 16 |
| Chicago,Ill. | Los Angeles,Cal. | 7 | CL&LCL | 124 | 2,235 | 2,758 | 18 | 19 |
| Chicago,Ill. | San Francisco,Cal. | 8 | CL&LCL | 152 | 2,271 | 2,745 | 15 | 19 |
| Chicago,Ill. | San Francisco,Cal. | 8 | CL&LCL | 131 | 2,264 | 2,535 | 17 | 19 |
| Kansas City,Mo. | Portland,Ore. | 4 | CL | 145 | 1,890 | 2,173 | 13 | 15 |
| Kansas City,Mo. | Spokane,Wash. | 4 | CL | 102 | 1,651 | 1,901 | 16 | 19 |
| Minneapolis-St.Paul,Minn. | Portland,Ore-Seattle,Wash. | 3 | CL&LCL | 120 | 1,755 | 1,904 | 15 | 16 |
| Chicago,Ill. | Portland,Ore-Seattle,Wash. | 9 | CL&LCL | 143 | 2,173 | 2,352 | 15 | 17 |
| Chicago,Ill. | Spokane,Wash. | 6 | CL | 118 | 1,866 | 2,273 | 16 | 19 |
| INTERMEDIATE | | | | | | | | |
| Denver,Colo. | Salt Lake City,Utah | 2 | CL | 27 | 570 | 625 | 21 | 23 |
| Denver,Colo. | Salt Lake City,Utah | 2 | CL | 39 | 570 | 613 | 15 | 16 |
| Denver,Colo. | Kansas City,Mo. | 6 | CL | 28 | 635 | 745 | 23 | 27 |
| Kansas City,Mo. | Denver,Colo. | 6 | CL | 45 | 636 | 745 | 14 | 17 |
| Denver,Colo. | Chicago,Ill. | 5 | CL | 50 | 1,019 | 1,173 | 20 | 24 |
| Chicago,Ill. | Denver,Colo. | 5 | CL&LCL | 59 | 1,008 | 1,182 | 18 | 20 |
| Chicago,Ill. | Kansas City,Mo. | 5 | CL | 24 | 449 | 513 | 19 | 21 |
| Chicago,Ill. | Oklahoma City,Okla. | 11 | CL&LCL | 30 | 542 | 585 | 18 | 20 |
| TEXAS AND LOUISIANA COMMON POINTS | | | | | | | | |
| Laredo,Texas | E.St.Louis,Ill. | 5 | CL Per | 70 | 1,103 | 1,172 | 16 | 17 |
| San Antonio,Texas | E.St.Louis,Ill | 4 | CL Per | 60 | 950 | 1,029 | 16 | 17 |
| Harlingen & Edinburg,Texas | E.St.Louis,Ill. | 3 | CL Per | 63 | 1,154 | 1,189 | 18 | 19 |
| Jacksonville,Texas | E.St.Louis,Ill. | 3 | CL Per | 37 | 664 | 707 | 18 | 19 |
| New Orleans,La. | Chicago,Ill. | 4 | CL Per | 40 | 918 | 1,105 | 23 | 28 |
| Kansas City,Mo. | Galveston,Texas | 11 | CL&LCL | 51 | 884 | 950 | 18 | 19 |
| St.Louis,Mo. | Houston,Texas | 4 | CL&LCL | 60 | 811 | 1,080 | 14 | 18 |
| Chicago,Ill. | Waco,Texas | 11 | CL&LCL | 39 | 816 | 846 | 21 | 22 |

* Perishables

Section 20. Present Speeds

Analysis 20.5 Maximum Speed Restrictions for Railway Freight Service on Good Tangent Track and Schedule Agreement Decisions*

| MAXIMUM SPEED RESTRICTIONS | NUMBER OF RAILWAYS | | | | | | |
|---|---|---|---|---|---|---|---|
| | UNITED STATES | NEW ENGLAND | CENTRAL EAST | POCAHONTAS | SOUTHEAST | NORTHWEST | SOUTHWEST |
| NUMBER OF ROADS REPORTING | 99 | 7 | 28 | 3 | 17 | 18 | 26 |
| Maximum speed, miles per hour | | | | | | | |
| 20 | 4 | - | 2 | - | - | 1 | 1 |
| 25 | 3 | - | - | - | 1 | 1 | 1 |
| 30 | 13 | 2 | 2 | - | 3 | 3 | 3 |
| 35 | 13 | - | 3 | - | 1 | 2 | 7 |
| 40 | 18 | 3 | 1 | 1 | 3 | 3 | 7 |
| 45 | 27 | 2 | 6 | 1 | 7 | 5 | 5 |
| 50 | 20 | - | 12 | 1 | 2 | 3 | 2 |
| 55 | 1 | - | 1 | - | - | - | - |
| 60 | 1 | - | 1 | - | - | - | - |
| RESTRICTING FACTORS | | | | | | | |
| Road | 66 | 5 | 16 | 2 | 19 | 10 | 14 |
| Power | 16 | 2 | 2 | - | 4 | 3 | 5 |
| Grade crossings | 2 | 2 | - | - | - | - | - |
| Crew experience | 3 | 1 | 1 | 1 | - | - | - |
| Equipment | 19 | - | 7 | - | 7 | 3 | 2 |
| Safety | 31 | - | 9 | 1 | 3 | 6 | 12 |
| Comfort | 1 | - | 1 | - | - | - | - |
| Local service | 5 | - | 5 | - | - | - | - |
| Economy of operation | 5 | - | 4 | 1 | - | - | - |
| Switching | 1 | - | 1 | - | - | - | - |
| Volume of traffic | 7 | 1 | 2 | - | - | 1 | 3 |
| Train control | 2 | - | - | 1 | - | 1 | - |
| Service requirements | 4 | - | - | 1 | 1 | 2 | - |
| General weather conditions | 5 | - | 1 | - | 3 | - | 1 |
| Length of train | 2 | - | - | - | 1 | - | 1 |
| Connection schedules | 2 | - | - | - | 1 | 1 | - |
| Operating practices | 1 | - | - | - | 1 | - | - |
| SCHEDULE AGREEMENT DECISIONS | | | | | | | |
| NUMBER OF ROADS REPORTING | 93 | 7 | 28 | 2 | 16 | 16 | 24 |
| When Operating and Traffic Department officers disagree as to proper schedule decision is reached by: | | | | | | | |
| OPERATING DEPARTMENT DECISION FINAL | | | | | | | |
| As to arrival or departure | 9 | - | 4 | - | - | 3 | 2 |
| As to running time | 25 | 1 | 7 | 1 | 4 | 8 | 3 |
| TRAFFIC DEPARTMENT DECISION FINAL | | | | | | | |
| As to arrival or departure | 9 | 1 | - | 1 | 3 | 3 | 1 |
| As to running time | 1 | - | 1 | - | - | - | - |
| MUTUAL AGREEMENTS | | | | | | | |
| As to arrival or departure | 5 | - | 1 | - | 1 | 1 | 2 |
| As to running time | 5 | - | 1 | - | 1 | 1 | 2 |
| EXECUTIVE DEPARTMENT MAKE DECISION | | | | | | | |
| As to arrival or departure | 72 | 6 | 23 | 1 | 12 | 9 | 20 |
| As to running time | 67 | 6 | 19 | 1 | 11 | 7 | 20 |

* From responses to Rail Carrier Inquiry.



SECTION 20. PRESENT SPEEDS

Analysis 20.6 Freight Schedule Conferences

| CHAIRMAN OF FREIGHT SCHEDULE CONFERENCE* | NUMBER OF RAILWAYS | | | | | | |
|---|---|---|---|---|---|---|---|
| | UNITED STATES | NEW ENGLAND | EAST CENTRAL | POCAHONTAS | SOUTHEAST | NORTHWEST | SOUTHWEST |
| LOCAL SCHEDULES | | | | | | | |
| CHAIRMAN OF CONFERENCE | | | | | | | |
| President of Road | 3 | 1 | - | - | - | - | 2 |
| Other Representatives of Executive Department | 1 | - | - | - | - | 1 | - |
| Head of Operating Department | 7 | 2 | 1 | - | - | - | 4 |
| Other Representatives of Operating Department | 43 | 1 | 18 | 2 | 8 | 7 | 7 |
| Head of Freight Traffic Department | 1 | - | - | - | 1 | - | - |
| Other Representatives of Freight Traffic Dept. | 1 | 1 | - | - | - | - | - |
| Number of Railways Reporting | 76 | 6 | 23 | 3 | 12 | 11 | 18 |
| JOINT SCHEDULES | | | | | | | |
| CHAIRMAN OF CONFERENCE | | | | | | | |
| President of Road | 2 | - | 1 | - | - | - | 1 |
| Other Representatives of Executive Department | - | - | - | - | - | - | - |
| Head of Operating Department | 7 | 1 | 1 | - | - | 1 | 4 |
| Other Representatives of Operating Department | 28 | 1 | 9 | 1 | 8 | 3 | 6 |
| Head of Traffic Department | 1 | - | - | - | 1 | - | - |
| Other Representatives of Traffic Department | 1 | 1 | - | - | - | - | - |
| Number of Railways Reporting | 61 | 6 | 17 | 2 | 11 | 11 | 14 |
| ATTENDANCE AT FREIGHT SCHEDULE CONFERENCES* | | | | | | | |
| LOCAL SCHEDULES | | | | | | | |
| REPRESENTATIVES OF | | | | | | | |
| OPERATING DEPARTMENT | | | | | | | |
| Vice President and/or General Managers and Assistants | 47 | 5 | 12 | 1 | 2 | 10 | 17 |
| General Superintendents of Transportation and Assistants | 40 | 1 | 14 | 2 | 6 | 5 | 12 |
| General Superintendents and Assistants | 16 | 1 | 8 | 2 | 3 | 1 | 2 |
| Division Superintendents and Assistants | 44 | 4 | 17 | 1 | 7 | 9 | 6 |
| Train Masters, Dispatchers and Assistants | 21 | 1 | 9 | 1 | 4 | 4 | 3 |
| All Other Representatives | 21 | 1 | 11 | - | 7 | 3 | 2 |
| TRAFFIC DEPARTMENT | | | | | | | |
| Chief Traffic Officer, Vice President and/or Traffic Manager | 22 | - | 4 | 2 | 5 | 2 | 9 |
| General and/or Freight Traffic Manager and Assistants | 30 | 1 | 10 | - | 2 | 8 | 9 |
| General Freight Agents and Assistants | 22 | 5 | 8 | 1 | 4 | 3 | 1 |
| Division Freight and General Agents | 6 | - | 1 | 1 | 1 | 3 | - |
| General Freight and Passenger Agents | 9 | - | 2 | - | 2 | 3 | 2 |
| All Other Representatives | 6 | - | 1 | - | - | 4 | 1 |
| Number of Railways Reporting | 76 | 6 | 23 | 3 | 12 | 11 | 18 |
| JOINT SCHEDULES | | | | | | | |
| REPRESENTATIVES OF | | | | | | | |
| OPERATING DEPARTMENT | | | | | | | |
| Vice President and/or General Managers and Assistants | 36 | 2 | 10 | - | 2 | 10 | 12 |
| General Superintendents of Transportation and Assistants | 36 | - | 12 | 2 | 7 | 5 | 10 |
| General Superintendents and Assistants | 11 | 1 | 4 | - | 3 | 2 | 1 |
| Division Superintendents and Assistants | 30 | 2 | 11 | - | 5 | 6 | 6 |
| Train Masters, Dispatchers and Assistants | 11 | - | 6 | - | 2 | 1 | 2 |
| All Other Representatives | 9 | 1 | 4 | - | 2 | 1 | 1 |
| TRAFFIC DEPARTMENT | | | | | | | |
| Chief Traffic Officer, Vice President and/or Traffic Manager | 20 | - | 4 | 2 | 6 | 2 | 6 |
| General and/or Freight Traffic Manager and Assistants | 26 | 3 | 5 | - | 3 | 6 | 9 |
| General Freight Agents and Assistants | 16 | 4 | 6 | - | 4 | 1 | 1 |
| Passenger Traffic Managers and Assistants | 6 | - | - | - | 2 | 3 | 1 |
| All Other Representatives | 7 | - | 2 | - | - | 4 | 1 |
| Number of Railways Reporting | 61 | 6 | 17 | 2 | 11 | 11 | 14 |

* From Responses to Rail Organization Inquiry.

SECTION 21. POTENTIAL SPEED

Analysis 21.1 Highway Terminal Speed Advantage

| | AVERAGE HOURS PER CAR RAIL DELIVERY | | |
|---|---|---|---|
| | TEAM TRACK | INDUSTRY TRACK | TRUCK DELIVERY |
| NEW YORK | 37-2/3 | 43-3/4 | 6 |
| PHILADELPHIA | 11-3/4 | 19-2/3 | 4 |
| PITTSBURGH | 15 | 34 | 4 |
| WASHINGTON | 19-1/2 | 62-1/4 | 2-1/2 |
| CHICAGO | 20 | 32-1/3 | 5 |
| MILWAUKEE | 23-1/2 | 43-1/4 | 3-1/2 |
| CINCINNATI | 31-2/3 | 44-1/4 | 3-1/2 |
| CLEVELAND | 8-3/4 | 52-3/4 | 4 |
| TOLEDO | 18-1/4 | 41 | 3 |
| DETROIT | 11-1/4 | 31 | 4 |
| ATLANTA | 10-1/2 | 25-1/2 | 3 |
| BIRMINGHAM | 53-1/2 | 31 | 4 |
| LOUISVILLE | 15 | 41-1/4 | 3 |
| MEMPHIS | 26-1/3 | 39-1/3 | 3 |
| LITTLE ROCK | 8-2/3 | 21 | 2 |
| NEW ORLEANS | 33-3/4 | 65-1/4 | 3-1/2 |
| KANSAS CITY | 55 | 28-1/3 | 3 |
| DENVER | 8-1/4 | 39 | 2-1/2 |
| MINNEAPOLIS | 32-1/3 | 58 | 2-1/2 |
| SAINT PAUL | 6-3/4 | 36-1/4 | 2-1/2 |
| OMAHA | 15-3/4 | 44-2/3 | 2-1/2 |
| SAINT LOUIS | 46-3/4 | 42-1/2 | 3-1/2 |
| DALLAS | 8-3/4 | 13 | 3 |
| FORT WORTH | 47-1/2 | 27 | 3 |
| HOUSTON | 19 | 40-3/4 | 3-1/2 |
| SEATTLE | 10-1/3 | 40-1/3 | 4 |
| LOS ANGELES | 19-1/2 | 34 | 5 |
| SAN FRANCISCO | 15 | 32 | 4 |
| NEW ENGLAND | | | |
| Major | 14 | 22-1/2 | - |
| Minor | 20-1/3 | 7-1/2 | - |
| TRUNK LINE | | | |
| Major | 17-1/4 | 29-3/4 | - |
| Minor | 10 | 17 | - |
| CENTRAL FREIGHT | | | |
| Major | 22-3/4 | 27 | - |
| Minor | 11 | 14-3/4 | - |
| POCAHONTAS | | | |
| Major | 17-1/2 | 21-1/3 | - |
| Minor | 8 | 12 | - |
| SOUTHEASTERN | | | |
| Major | 21-1/3 | 34-3/4 | - |
| Minor | 16 | 14 | - |
| WESTERN TRUNK LINE | | | |
| Major | 17-1/4 | 29-1/4 | - |
| Minor | 13-1/4 | 20 | - |
| SOUTHWESTERN | | | |
| Major | 21-3/4 | 30 | - |
| Minor | 12-3/4 | 16 | - |
| PACIFIC NORTHWEST | | | |
| Major | 23-1/2 | 38 | - |
| Minor | 18 | 33-2/3 | - |
| PACIFIC SOUTHWEST | | | |
| Major | 36-3/4 | 24-1/4 | - |
| Minor | 10-1/3 | 12-1/2 | - |
| UNITED STATES | | | |
| Major | - | - | 2-1/2 |
| Minor | - | - | 1-1/2 |



SECTION 22. EFFECT OF SPEEDY SERVICE

Analysis 22.1 Result of Highway Speed

| BUSINESS GROUPS | TONS REPORTED BY SHIPPERS — ALL SHIPPERS# TOTAL TONNAGE (000) | ALL SHIPPERS# HIGHWAY TONNAGE (000) | ALL SHIPPERS# PER CENT | SHIPPERS USING HIGHWAY ON ACCOUNT OF SUPERIOR SPEED# TOTAL TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT OF SUPERIOR SPEED# HIGHWAY TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT OF SUPERIOR SPEED# PER CENT |
|---|---|---|---|---|---|---|
| ALL GROUPS | 290,203 | 16,275 | 6% | 75,492 | 9,329 | 12% |
| I ROUGH MATERIAL* | 12,350 | 1,683 | 14% | 411 | 255 | 62% |
| 34 Sand, Stone, Gravel | 12,060 | 1,670 | 14 | 408 | 255 | 62 |
| 8b Timber | 290 | 14 | 5 | 3 | / | 2 |
| II RAW MATERIAL* | 67,284 | 1,959 | 3% | 5,543 | 455 | 8% |
| 10aGrain | 3,068 | 3 | / | 426 | 3 | 1 |
| 16 Fresh Fruits and Vegetables | 2,436 | 482 | 20 | 493 | 102 | 21 |
| 22 Livestock and Poultry | 832 | 476 | 57 | 36 | 22 | 62 |
| 12 Coal, Coke and Fuel | 45,165 | 539 | 1 | 2,001 | 179 | 9 |
| 26 Ores and Concentrates | 8,463 | 48 | 1 | 1,653 | 19 | 1 |
| 8a Lumber | 6,833 | 318 | 5 | 745 | 51 | 7 |
| 03 Barrels, Cooperage Material | 487 | 93 | 19 | 190 | 79 | 42 |
| III SEMIPROCESSED MATERIAL* | 12,748 | 1,314 | 10% | 5,776 | 830 | 14% |
| 13 Cotton, Cotton Linters | 1,259 | 185 | 15 | 204 | 50 | 25 |
| 29 Paper, Paper Products | 11,439 | 1,123 | 10 | 5,568 | 777 | 14 |
| 35 Horticultural Material | 50 | 5 | 10 | 5 | 3 | 68 |
| IV NECESSARIES* | 50,748 | 3,869 | 8% | 21,376 | 2,238 | 10% |
| 04 Beverages and Liquors | 1,063 | 339 | 32 | 770 | 259 | 34 |
| 36 Sugar, Syrups and Molasses | 9,679 | 638 | 7 | 169 | 2 | 1 |
| 39 Vegetable Oil, Meal and Cake | 1,360 | 213 | 16 | 94 | 17 | 18 |
| 27 Packing House Products | 7,534 | 494 | 7 | 7,029 | 460 | 7 |
| 02 Bakery Goods, Confectionery | 1,486 | 258 | 17 | 1,318 | 245 | 19 |
| 09 Canned Goods | 2,342 | 299 | 13 | 785 | 137 | 17 |
| 18 Groceries | 2,362 | 544 | 23 | 866 | 514 | 59 |
| 10bCereals, Flour, Mill Products | 18,401 | 406 | 2 | 2,660 | 301 | 11 |
| 17 Furniture and Furnishings | 606 | 66 | 11 | 292 | 50 | 17 |
| 31 Porcelain, China, etc. | 152 | 6 | 4 | 14 | 3 | 20 |
| 21 Leather and Leather Goods | 927 | 77 | 8 | 171 | 35 | 20 |
| 37 Textiles | 4,166 | 433 | 10 | 7,029 | 165 | 2 |
| 07 Boots and Shoes | 506 | 50 | 10 | 140 | 36 | 25 |
| 15 Dry Goods, Clothing | 163 | 37 | 23 | 38 | 14 | 37 |
| V AUXILIARIES* | 98,280 | 4,192 | 4% | 21,884 | 3,632 | 17% |
| 8a Masonry Materials (except wood) | 17,756 | 830 | 5 | 4,804 | 773 | 16 |
| 30 Petroleum, crude and refined | 37,422 | 1,249 | 3 | 12,380 | 1,083 | 9 |
| 28 Paints, Varnishes and Gums | 197 | 36 | 18 | 117 | 22 | 19 |
| 11 Chemicals | 6,807 | 322 | 5 | 1,676 | 142 | 9 |
| 40 Miscellaneous Commodities | 36,098 | 1,755 | 5 | 2,907 | 1,612 | 56 |
| VI ACCESSORIES* | 48,793 | 3,258 | 7% | 20,501 | 1,938 | 9% |
| 19 Iron and Steel, Structural | 11,363 | 226 | 2 | 567 | 174 | 31 |
| 20 Iron and Steel Articles | 19,935 | 998 | 5 | 10,816 | 434 | 4 |
| 24 Metals, Non-ferrous | 1,921 | 216 | 11 | 1,038 | 116 | 11 |
| 33 Rubber, Rubber Articles, Tires | 1,584 | 213 | 13 | 655 | 65 | 10 |
| 23 Machinery, Vehicles, etc. | 4,974 | 205 | 4 | 1,808 | 150 | 8 |
| 32 Plumbing and Heating Supplies | 529 | 21 | 4 | 259 | 10 | 4 |
| 01 Automotive Vehicles and Parts | 6,331 | 1,253 | 20 | 4,890 | 905 | 18 |
| 05 Boats, Marine Equipment | 154 | 1 | 1 | 3 | 1 | 25 |
| 06 Books and Periodicals | 821 | 55 | 7 | 296 | 53 | 18 |
| 14 Department Store Merchandise | 466 | 37 | 8 | 107 | 20 | 19 |
| 38 Tobacco, Tobacco Products | 710 | 32 | 5 | 63 | 12 | 19 |
| 25 Musical Instruments and Supplies | 5 | / | 3 | - | - | - |

* Where commodities of two groups have been combined the total is placed under the group in which the predominant commodity falls.
\# As reported by respondents to Shippers' Inquiry.
/ Less than 500 tons.
/ Less than 1/2%.

SECTION 24. PRESENT SERVICE

Analysis 24.1 Railway Commodities Delivered (Carloads only) United States and Eastern District Territories - 1932

| COMMODITY GROUP | UNITED STATES TOTAL CARS (000) | PERCENTAGE CARS TERMINATED HOUSE | TEAM | IN-DUSTRY | CONNECTION DELIVERIES | NEW ENGLAND TOTAL CARS (000) | PERCENTAGE CARS TERMINATED HOUSE | TEAM | IN-DUSTRY | CONNECTION DELIVERIES |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 18,285 | 1% | 18% | 59% | 19% | 1,031 | 2% | 21% | 68% | 6% |
| I ROUGH MATERIAL* | 837 | 4 | 44 | 42 | 10 | 15 | # | 36 | 56 | 7 |
| Sand, Stone and Gravel | 837 | 4 | 44 | 42 | 10 | 15 | # | 36 | 56 | 7 |
| II RAW MATERIAL* | 9,585 | 3 | 14 | 63 | 21 | 408 | 1 | 21 | 73 | 6 |
| Bulk Grain and Beets | 990 | 4 | 1 | 55 | 39 | 19 | 1 | 24 | 71 | 4 |
| Perishables | 881 | 12 | 42 | 28 | 18 | 88 | # | 47 | 47 | 5 |
| Live Animals | 982 | 3 | 15 | 57 | 25 | 29 | 1 | 19 | 77 | 4 |
| Coal and Coke | 5,165 | 2 | 11 | 70 | 17 | 204 | 1 | 10 | 82 | 6 |
| Ores | 456 | 1 | 9 | 72 | 18 | 8 | 1 | 25 | 58 | 15 |
| Sulphur and Sulphuric Acid | 106 | 15 | 3 | 65 | 18 | 2 | - | 4 | 80 | 16 |
| Forest Products | 1,005 | 2 | 16 | 63 | 19 | 57 | 1 | 19 | 77 | 3 |
| III SEMIPROCESSED MATERIAL* | 716 | 6 | 17 | 53 | 24 | 54 | 5 | 30 | 62 | 4 |
| Cotton, Hay and Tobacco | 404 | 6 | 15 | 53 | 26 | 20 | 7 | 38 | 53 | 2 |
| Paper and Products | 312 | 6 | 20 | 52 | 22 | 34 | 3 | 25 | 67 | 5 |
| IV NECESSARIES* | 2,373 | 4 | 25 | 50 | 20 | 201 | 1 | 33 | 60 | 6 |
| Cereals | 744 | 5 | 32 | 47 | 17 | 67 | 2 | 40 | 55 | 4 |
| Miscellaneous Farm Products | 451 | 5 | 33 | 43 | 20 | 23 | 3 | 44 | 50 | 3 |
| Edible Animal Products | 453 | 7 | 19 | 57 | 17 | 66 | # | 26 | 63 | 11 |
| Oils-Vegetable and Animal | 184 | 2 | 11 | 55 | 31 | 6 | # | 18 | 76 | 5 |
| Manufactured Food | 490 | 3 | 19 | 53 | 26 | 27 | 1 | 28 | 63 | 8 |
| Textiles and Leather | 50 | 4 | 16 | 59 | 21 | 11 | 4 | 28 | 68 | 1 |
| V AUXILIARIES* | 3,716 | 4 | 18 | 63 | 15 | 283 | 5 | 17 | 71 | 7 |
| Petroleum and Products | 1,816 | 3 | 11 | 72 | 14 | 103 | 1 | 5 | 83 | 10 |
| Building Materials | 478 | 3 | 37 | 47 | 12 | 35 | 1 | 33 | 62 | 4 |
| Chemicals | 43 | 8 | 10 | 53 | 29 | 3 | - | 10 | 86 | 4 |
| Miscellaneous | 1,378 | 6 | 19 | 56 | 19 | 143 | 9 | 21 | 65 | 6 |
| VI ACCESSORIES* | 1,058 | 6 | 22 | 54 | 18 | 69 | 2 | 36 | 56 | 6 |
| Iron and Steel | 576 | 4 | 15 | 62 | 19 | 27 | 1 | 24 | 63 | 12 |
| Other Metals | 26 | 5 | 8 | 59 | 28 | 4 | 6 | 9 | 83 | 2 |
| Appliances | 348 | 11 | 31 | 43 | 16 | 29 | 4 | 49 | 44 | 3 |
| Glass and Tile | 108 | 5 | 31 | 44 | 19 | 10 | # | 40 | 58 | 2 |
| | TRUNK LINE | | | | | CENTRAL | | | | |
| ALL COMMODITIES | 4,565 | 7% | 28% | 61% | 7% | 4,732 | 1% | 13% | 58% | 28% |
| I ROUGH MATERIAL* | 115 | 1 | 33 | 60 | 6 | 206 | 4 | 35 | 46 | 15 |
| Sand, Stone and Gravel | 115 | 1 | 33 | 60 | 6 | 206 | 4 | 35 | 46 | 15 |
| II RAW MATERIAL* | 2,486 | 6 | 19 | 68 | 7 | 2,769 | 1 | 9 | 62 | 28 |
| Bulk Grain and Beets | 83 | 9 | 19 | 54 | 18 | 215 | # | 2 | 39 | 59 |
| Perishables | 292 | 33 | 47 | 18 | 2 | 203 | 3 | 45 | 18 | 34 |
| Live Animals | 154 | 4 | 24 | 62 | 10 | 259 | 1 | 8 | 78 | 13 |
| Coal and Coke | 1,689 | 3 | 14 | 78 | 5 | 1,790 | # | 5 | 66 | 28 |
| Ores | 109 | 1 | 3 | 53 | 43 | 127 | - | 1 | 88 | 11 |
| Sulphur and Sulphuric Acid | 8 | 3 | 5 | 83 | 9 | 9 | # | 4 | 55 | 41 |
| Forest Products | 150 | 1 | 28 | 66 | 7 | 166 | 1 | 15 | 55 | 29 |
| III SEMIPROCESSED MATERIAL* | 136 | 14 | 31 | 50 | 5 | 110 | 1 | 17 | 48 | 34 |
| Cotton, Hay and Tobacco | 34 | 8 | 51 | 39 | 2 | 19 | # | 11 | 49 | 39 |
| Paper and Products | 102 | 16 | 24 | 53 | 6 | 91 | 1 | 18 | 48 | 33 |
| IV NECESSARIES* | 601 | 10 | 28 | 56 | 6 | 435 | 1 | 22 | 44 | 33 |
| Cereals | 168 | 7 | 35 | 52 | 6 | 119 | 2 | 27 | 46 | 25 |
| Miscellaneous Farm Products | 111 | 12 | 45 | 39 | 4 | 77 | 2 | 19 | 42 | 38 |
| Edible Animal Products | 186 | 15 | 18 | 63 | 5 | 87 | 1 | 25 | 37 | 38 |
| Oils-Vegetable and Animal | 17 | 7 | 11 | 68 | 14 | 18 | # | 9 | 40 | 51 |
| Manufactured Food | 109 | 6 | 22 | 64 | 8 | 106 | 1 | 19 | 50 | 31 |
| Textiles and Leather | 10 | 11 | 15 | 63 | 12 | 8 | 2 | 18 | 43 | 37 |
| V AUXILIARIES* | 831 | 5 | 22 | 66 | 7 | 944 | 3 | 15 | 58 | 23 |
| Petroleum and Products | 264 | 1 | 10 | 82 | 6 | 458 | 1 | 13 | 66 | 19 |
| Building Materials | 136 | 2 | 40 | 52 | 6 | 98 | 2 | 31 | 47 | 21 |
| Chemicals | 12 | 4 | 13 | 75 | 8 | 10 | # | 7 | 52 | 41 |
| Miscellaneous | 419 | 9 | 24 | 59 | 8 | 378 | 6 | 14 | 52 | 28 |
| VI ACCESSORIES* | 396 | 12 | 22 | 56 | 9 | 287 | 1 | 11 | 59 | 30 |
| Iron and Steel | 223 | 8 | 16 | 65 | 11 | 201 | # | 8 | 62 | 29 |
| Other Metals | 6 | 13 | 12 | 64 | 11 | 7 | # | 7 | 53 | 40 |
| Appliances | 126 | 20 | 31 | 45 | 5 | 57 | 1 | 15 | 53 | 31 |
| Glass and Tile | 40 | 9 | 31 | 47 | 14 | 22 | 2 | 26 | 42 | 31 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Less than 1/2%.



SECTION 24. PRESENT SERVICE

Analysis 24.2 Railway Commodities Delivered (Carloads only) Southern District Territories - 1932

| COMMODITY GROUP | POCAHONTAS TOTAL CARS (000) | PERCENTAGE CARS TERMINATED HOUSE | TEAM | IN-DUSTRY | CONNECTION DELIVERIES | SOUTHEASTERN TOTAL CARS (000) | PERCENTAGE CARS TERMINATED HOUSE | TEAM | IN-DUSTRY | CONNECTION DELIVERIES |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 782 | 1% | 12% | 77% | 11% | 1,702 | 3% | 21% | 56% | 20% |
| I ROUGH MATERIAL | 25 | 4% | 33% | 49% | 14% | 111 | 4% | 60% | 30% | 6% |
| Sand, Stone and Gravel | 25 | 4 | 33 | 49 | 14 | 114 | 4 | 60 | 30 | 6 |
| II RAW MATERIAL* | 493 | #% | 5% | 87% | 7% | 663 | 1% | 15% | 60% | 22% |
| Bulk Grain and Beets | 9 | 1 | 18 | 65 | 16 | 40 | 1 | 9 | 62 | 29 |
| Perishables | 18 | # | 43 | 40 | 17 | 3 | 1 | 44 | 38 | 17 |
| Live Animals | 7 | 2 | 27 | 32 | 39 | 18 | 2 | 16 | 60 | 21 |
| Coal and Coke | 407 | # | 3 | 93 | 5 | 291 | 1 | 17 | 61 | 22 |
| Ores | 16 | # | 7 | 85 | 7 | 26 | 1 | 4 | 83 | 11 |
| Sulphur and Sulphuric Acid | 3 | # | 4 | 76 | 20 | 57 | 26 | 1 | 69 | 4 |
| Forest Products | 34 | 1 | 12 | 64 | 24 | 178 | 4 | 10 | 57 | 29 |
| III SEMIPROCESSED MATERIAL | 35 | 1% | 8% | 67% | 24% | 147 | 1% | 7% | 63% | 29% |
| Cotton, Hay and Tobacco | 27 | 1 | 6 | 67 | 25 | 125 | 4 | 6 | 65 | 25 |
| Paper and Products | 9 | # | 12 | 65 | 23 | 22 | 1 | 13 | 52 | 34 |
| IV NECESSARIES* | 79 | 2% | 33% | 47% | 19% | 379 | 2% | 27% | 50% | 20% |
| Cereals | 23 | 2 | 41 | 44 | 13 | 111 | 3 | 33 | 45 | 19 |
| Miscellaneous Farm Products | 26 | 2 | 37 | 37 | 24 | 96 | 3 | 46 | 39 | 12 |
| Edible Animal Products | 13 | 2 | 24 | 63 | 11 | 43 | 2 | 13 | 63 | 22 |
| Oils-Vegetable and Animal | 3 | - | 13 | 32 | 55 | 69 | 2 | 9 | 64 | 26 |
| Manufactured Food | 12 | 1 | 24 | 57 | 18 | 51 | 1 | 22 | 48 | 29 |
| Textiles and Leather | 1 | 18 | 9 | 50 | 22 | 11 | 2 | 8 | 70 | 20 |
| V AUXILIARIES* | 113 | 2% | 17% | 68% | 14% | 326 | 2% | 16% | 65% | 17% |
| Petroleum and Products | 41 | 1 | 14 | 73 | 12 | 183 | 1 | 9 | 78 | 12 |
| Building Material | 15 | 1 | 38 | 47 | 13 | 42 | 2 | 43 | 42 | 13 |
| Chemicals | 1 | 1 | 34 | 53 | 13 | 9 | 30 | 4 | 21 | 45 |
| Miscellaneous | 56 | 3 | 13 | 69 | 15 | 91 | 3 | 20 | 53 | 25 |
| VI ACCESSORIES* | 38 | 2% | 23% | 62% | 13% | 73 | 5% | 23% | 48% | 17% |
| Iron and Steel | 24 | 1 | 14 | 78 | 8 | 33 | 2 | 19 | 60 | 20 |
| Other Metals | 1 | - | 1 | 76 | 23 | 1 | 26 | 5 | 40 | 29 |
| Appliances | 9 | 5 | 48 | 23 | 23 | 31 | 9 | 36 | 40 | 14 |
| Glass and Tile | 4 | # | 28 | 53 | 19 | 9 | 1 | 45 | 37 | 17 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Less than 1/2%.

SECTION 24. PRESENT SERVICE

Analysis 24.3 Railway Commodities Delivered (Carloads only)
Western District Territories - 1932

| COMMODITY GROUP | WESTERN TRUNK LINE TOTAL CARS (000) | PERCENTAGE CARS TERMINATED HOUSE | TEAM | IN-DUSTRY | CONNECTION DELIVERIES | PACIFIC NORTHWEST TOTAL CARS (000) | PERCENTAGE CARS TERMINATED HOUSE | TEAM | IN-DUSTRY | CONNECTION DELIVERIES |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 2,909 | 5% | 17% | 47% | 31% | 501 | 1% | 11% | 78% | 13% |
| I ROUGH MATERIAL | 157 | 9 | 48 | 30 | 13 | 21 | # | 6 | 92 | 1 |
| Sand, Stone and Gravel | 157 | 9 | 48 | 30 | 13 | 21 | # | 6 | 92 | 1 |
| II RAW MATERIAL* | 1,726 | 4 | 13 | 49 | 34 | 314 | 1 | 10 | 76 | 13 |
| Bulk Grain and Beets | 404 | 1 | 2 | 54 | 43 | 74 | 1 | 4 | 83 | 12 |
| Perishables | 91 | 1 | 30 | 29 | 40 | 38 | 1 | 15 | 69 | 16 |
| Live Animals | 387 | 4 | 12 | 46 | 39 | 21 | 3 | 21 | 64 | 12 |
| Coal and Coke | 632 | 6 | 15 | 50 | 29 | 55 | 1 | 17 | 69 | 13 |
| Ores | 80 | 6 | 37 | 42 | 15 | 5 | # | 2 | 94 | 4 |
| Sulphur and Sulphuric Acid | 4 | 3 | 2 | 47 | 48 | / | - | 7 | 93 | - |
| Forest Products | 128 | 6 | 20 | 52 | 23 | 120 | # | 7 | 78 | 14 |
| III SEMIPROCESSED MATERIAL* | 69 | 2 | 23 | 31 | 46 | 15 | 1 | 46 | 44 | 10 |
| Cotton, Hay and Tobacco | 36 | 3 | 29 | 25 | 43 | 13 | 1 | 50 | 39 | 9 |
| Paper and Products | 32 | 1 | 16 | 37 | 47 | 3 | - | 22 | 65 | 14 |
| IV NECESSARIES* | 265 | 7 | 20 | 37 | 36 | 53 | 1 | 18 | 63 | 18 |
| Cereals | 96 | 11 | 27 | 36 | 27 | 28 | 1 | 19 | 61 | 19 |
| Miscellaneous Farm Products | 35 | 5 | 17 | 31 | 47 | 10 | 1 | 24 | 61 | 14 |
| Edible Animal Products | 28 | 7 | 11 | 48 | 34 | 3 | 2 | 2 | 69 | 27 |
| Oils-Vegetable and Animal | 14 | 5 | 26 | 36 | 33 | 1 | - | 46 | 52 | 2 |
| Manufactured Food | 87 | 3 | 15 | 39 | 42 | 11 | 1 | 12 | 69 | 18 |
| Textiles and Leather | 4 | # | 6 | 26 | 68 | 1 | - | 26 | 65 | 9 |
| V AUXILIARIES* | 606 | 8 | 18 | 53 | 21 | 83 | 1 | 16 | 70 | 13 |
| Petroleum and Products | 382 | 9 | 14 | 60 | 17 | 53 | 1 | 13 | 75 | 10 |
| Building Material | 75 | 11 | 35 | 39 | 15 | 11 | 1 | 34 | 45 | 20 |
| Chemicals | 5 | 2 | 12 | 43 | 43 | / | - | 31 | 64 | 5 |
| Miscellaneous | 144 | 4 | 18 | 42 | 36 | 20 | 2 | 13 | 69 | 16 |
| VI ACCESSORIES* | 86 | 6 | 23 | 38 | 33 | 14 | 4 | 41 | 38 | 16 |
| Iron and Steel | 30 | 4 | 17 | 42 | 37 | 3 | 3 | 30 | 50 | 17 |
| Other Metals | 2 | 1 | 10 | 39 | 50 | 1 | - | 6 | 50 | 44 |
| Appliances | 40 | 6 | 25 | 38 | 32 | 9 | 5 | 47 | 35 | 14 |
| Glass and Tile | 14 | 10 | 31 | 30 | 29 | 2 | 7 | 53 | 27 | 13 |
| | SOUTHWESTERN | | | | | PACIFIC SOUTHWEST | | | | |
| ALL COMMODITIES | 1,329 | 3% | 25% | 52% | 20% | 733 | 1% | 15% | 65% | 19% |
| I ROUGH MATERIAL | 142 | 4 | 66 | 26 | 4 | 43 | 1 | 21 | 63 | 14 |
| Sand, Stone and Gravel | 142 | 4 | 66 | 26 | 4 | 43 | 1 | 21 | 63 | 14 |
| II RAW MATERIAL* | 377 | 1 | 19 | 50 | 30 | 349 | 1 | 17 | 70 | 12 |
| Bulk Grain and Beets | 95 | 1 | 4 | 49 | 47 | 51 | # | 3 | 88 | 9 |
| Perishables | 48 | 1 | 23 | 44 | 33 | 51 | 1 | 49 | 31 | 20 |
| Live Animals | 48 | 3 | 38 | 25 | 35 | 58 | 2 | 24 | 44 | 31 |
| Coal and Coke | 92 | 3 | 29 | 55 | 13 | 45 | # | 17 | 77 | 6 |
| Ores | 17 | # | 5 | 76 | 20 | 69 | # | # | 96 | 3 |
| Sulphur and Sulphuric Acid | 20 | # | 6 | 50 | 44 | 3 | 1 | 8 | 81 | 11 |
| Forest Products | 99 | 2 | 24 | 58 | 17 | 71 | 1 | 16 | 75 | 8 |
| III SEMIPROCESSED MATERIAL* | 136 | 9 | 7 | 52 | 31 | 14 | 1 | 19 | 59 | 21 |
| Cotton, Hay and Tobacco | 124 | 10 | 6 | 52 | 32 | 7 | 1 | 18 | 65 | 16 |
| Paper and Products | 12 | 1 | 21 | 55 | 23 | 8 | 1 | 19 | 54 | 26 |
| IV NECESSARIES* | 262 | 3 | 23 | 51 | 23 | 117 | # | 10 | 50 | 39 |
| Cereals | 107 | 4 | 36 | 42 | 18 | 26 | 1 | 16 | 52 | 31 |
| Miscellaneous Farm Products | 42 | 2 | 18 | 65 | 15 | 32 | # | 10 | 48 | 42 |
| Edible Animal Products | 15 | 3 | 11 | 61 | 25 | 10 | 2 | 5 | 49 | 44 |
| Oils-Vegetable and Animal | 50 | 1 | 10 | 50 | 39 | 6 | # | 11 | 56 | 32 |
| Manufactured Food | 44 | 2 | 17 | 60 | 22 | 42 | # | 8 | 49 | 43 |
| Textiles and Leather | 4 | 3 | 16 | 66 | 15 | 1 | 1 | 8 | 62 | 29 |
| V AUXILIARIES* | 353 | 3 | 19 | 68 | 11 | 176 | 1 | 12 | 70 | 16 |
| Petroleum and Products | 246 | 2 | 11 | 78 | 9 | 86 | # | 7 | 80 | 13 |
| Building Material | 45 | 2 | 55 | 35 | 8 | 22 | 1 | 19 | 63 | 17 |
| Chemicals | 1 | 1 | 27 | 57 | 15 | 2 | 2 | 5 | 54 | 38 |
| Miscellaneous | 61 | 7 | 24 | 52 | 17 | 66 | 3 | 17 | 61 | 20 |
| VI ACCESSORIES* | 58 | 6 | 40 | 38 | 16 | 35 | 3 | 15 | 55 | 27 |
| Iron and Steel | 25 | 2 | 43 | 45 | 11 | 11 | 1 | 13 | 61 | 25 |
| Other Metals | 2 | - | 1 | 43 | 55 | 2 | - | 3 | 64 | 34 |
| Appliances | 26 | 10 | 44 | 28 | 17 | 21 | 4 | 17 | 51 | 27 |
| Glass and Tile | 5 | 4 | 23 | 53 | 20 | 2 | - | 11 | 59 | 30 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Less than 1/2%.
/ Less than 500.



SERVICE 24. PRESENT SERVICE

Analysis 24.4 Railway Deliveries - United States - 1932 #

| DISTRICTS AND TERRITORIES | CARS ORIGINATED TOTAL (000) | HOUSE TRACK (000) | TEAM TRACK (000) | INDUSTRY TRACK (000) | CONNECTION TRACKS (000) | CARS TERMINATED TOTAL (000) | HOUSE TRACK (000) | TEAM TRACK (000) | INDUSTRY TRACK (000) | CONNECTION TRACKS (000) |
|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 30,104 | 9,684 | 1,871 | 15,547 | 3,002 | 25,465 | 7,508 | 3,436 | 10,990 | 3,531 |
| EASTERN | 14,648 | 4,682 | 809 | 7,704 | 1,453 | 14,052 | 3,917 | 1,927 | 6,479 | 1,729 |
| SOUTHERN | 6,129 | 1,797 | 371 | 3,613 | 348 | 3,884 | 1,435 | 458 | 1,570 | 421 |
| WESTERN | 9,327 | 3,205 | 691 | 4,230 | 1,201 | 7,529 | 2,156 | 1,051 | 2,941 | 1,381 |
| NEW ENGLAND | 1,368 | 659 | 110 | 555 | 44 | 1,544 | 498 | 259 | 722 | 65 |
| TRUNK LINE | 6,541 | 1,911 | 326 | 3,879 | 425 | 6,239 | 1,888 | 1,042 | 2,977 | 332 |
| CENTRAL | 6,739 | 2,112 | 373 | 3,270 | 984 | 6,269 | 1,531 | 626 | 2,780 | 1,332 |
| POCAHONTAS | 2,359 | 412 | 101 | 1,779 | 67 | 1,105 | 323 | 95 | 603 | 84 |
| SOUTHEASTERN | 3,770 | 1,385 | 270 | 1,834 | 281 | 2,779 | 1,112 | 363 | 967 | 337 |
| WESTERN TRUNK LINE | 4,599 | 1,861 | 277 | 1,690 | 771 | 3,955 | 1,145 | 520 | 1,380 | 910 |
| SOUTHWESTERN | 2,600 | 867 | 228 | 1,226 | 279 | 1,889 | 556 | 350 | 715 | 268 |
| PACIFIC NORTHWEST | 929 | 233 | 62 | 567 | 67 | 671 | 169 | 71 | 365 | 66 |
| PACIFIC SOUTHWEST | 1,199 | 244 | 124 | 747 | 84 | 1,014 | 286 | 110 | 481 | 137 |
| | PERCENTAGES - CARS ORIGINATED | | | | | PERCENTAGES - CARS TERMINATED | | | | |
| UNITED STATES | 100% | 32% | 6% | 52% | 10% | 100% | 30% | 13% | 43% | 14% |
| EASTERN | 100 | 31 | 6 | 53 | 10 | 100 | 28 | 14 | 46 | 12 |
| SOUTHERN | 100 | 29 | 6 | 59 | 6 | 100 | 37 | 12 | 40 | 11 |
| WESTERN | 100 | 34 | 7 | 46 | 13 | 100 | 29 | 14 | 39 | 18 |
| NEW ENGLAND | 100 | 45 | 9 | 43 | 3 | 100 | 32 | 17 | 47 | 4 |
| TRUNK LINE | 100 | 29 | 5 | 60 | 6 | 100 | 30 | 17 | 48 | 5 |
| CENTRAL | 100 | 31 | 6 | 48 | 15 | 100 | 24 | 10 | 45 | 21 |
| POCAHONTAS | 100 | 17 | 4 | 76 | 3 | 100 | 29 | 9 | 54 | 8 |
| SOUTHEASTERN | 100 | 37 | 7 | 49 | 7 | 100 | 40 | 13 | 35 | 12 |
| WESTERN TRUNK LINE | 100 | 40 | 6 | 37 | 17 | 100 | 29 | 13 | 35 | 23 |
| SOUTHWESTERN | 100 | 33 | 9 | 47 | 11 | 100 | 29 | 19 | 38 | 14 |
| PACIFIC NORTHWEST | 100 | 25 | 7 | 61 | 7 | 100 | 25 | 11 | 54 | 10 |
| PACIFIC SOUTHWEST | 100 | 20 | 10 | 63 | 7 | 100 | 28 | 11 | 47 | 14 |

# Includes L.C.L.

SECTION 24. PRESENT SERVICE

Analysis 24.5 Rail Commodity Collections (Carload only) - Dec. 13, 1933.

| COMMODITY GROUPS | TOTAL CARS ORIGINATED | PERCENTAGES - CARS ORIGINATED | | | |
|---|---|---|---|---|---|
| | | HOUSE | TEAM | INDUSTRY | CONNECTION DELIVERY |
| ALL COMMODITIES | 49,105 | 4 % | 8 % | 74 % | 14 % |
| I ROUGH MATERIAL | 49,104 | 1 % | 5 % | 85 % | 9 % |
| Sand, Stone & Gravel | 1,592 | 1 | 5 | 85 | 9 |
| II RAW MATERIAL | 27,694 | 4 % | 10 % | 77 % | 9 % |
| Bulk Grain & Beets | 3,085 | 13 | 14 | 57 | 16 |
| Perishables | 2,199 | 11 | 20 | 61 | 8 |
| Live Animals | 2,696 | 10 | 34 | 44 | 12 |
| Coal & Coke | 14,804 | - | - | 93 | 7 |
| Ores | 876 | - | 7 | 87 | 6 |
| Sulphur & Sulphuric Acid | 586 | 1 | 2 | 89 | 8 |
| Forest Products | 3,448 | 5 | 26 | 60 | 9 |
| III SEMIPROCESSED MATERIAL | 2,033 | 14 % | 21 % | 53 % | 12 % |
| Cotton, Hay & Tobacco | 1,305 | 17 | 30 | 45 | 8 |
| Paper & Products | 728 | 8 | 7 | 67 | 18 |
| IV NECESSARIES | 6,133 | 5 % | 6 % | 63 % | 26 % |
| Cereals | 1,737 | 2 | 3 | 64 | 31 |
| Miscellaneous Farm Products | 895 | 8 | 13 | 64 | 15 |
| Edible Animal Products | 1,398 | 3 | 5 | 53 | 39 |
| Oils-Vegetable & Animal | 488 | 6 | 10 | 65 | 19 |
| Manufactured Food | 1,369 | 5 | 4 | 72 | 19 |
| Textiles & Leather | 246 | 20 | 9 | 58 | 13 |
| V AUXILIARIES | 8,001 | 2 % | 2 % | 76 % | 20 % |
| Petroleum & Products | 5,180 | - | 1 | 78 | 21 |
| Building Materials | 1,042 | 1 | 2 | 81 | 16 |
| Chemicals | 273 | 6 | 6 | 62 | 26 |
| Miscellaneous | 1,506 | 9 | 6 | 66 | 19 |
| VI ACCESSORIES | 3,652 | 2 % | 4 % | 67 % | 27 % |
| Iron & Steel | 2,432 | 2 | 3 | 65 | 30 |
| Other Metals | 92 | - | 8 | 63 | 29 |
| Appliances | 840 | 4 | 6 | 69 | 21 |
| Glass and Tile | 288 | 2 | 4 | 79 | 15 |



SECTION 24. PRESENT SERVICE

Analysis 24.6 Shippers cost to complete rail service - United States - 1932

| BUSINESS GROUPS | SHIPPERS' EXTRA COST PER TON | |
|---|---|---|
| | DRAYAGE TO AND FROM TEAM TRACK | INDUSTRY TRACK EXPENSES |
| ALL GROUPS | $ 1.21 | $ .06 |
| I ROUGH MATERIAL* | $ .18 | $ .06 |
| 34 Sand, Stone, Gravel | .17 | .06 |
| 8b Timber | .76 | .05 |
| II RAW MATERIAL* | $ .69 | $ .04 |
| 10a Grain | .75 | .02 |
| 16 Fresh Fruits and Vegetables | 1.34 | .08 |
| 22 Livestock and Poultry | 2.56 | .11 |
| 12 Coal, Coke and Fuel | .77 | .02 |
| 26 Ores and Concentrates | .19 | .03 |
| 8a Lumber | .56 | .14 |
| 03 Barrels, Cooperage Material | .73 | .05 |
| III SEMIPROCESSED MATERIAL* | $ .49 | $ .06 |
| 13 Cotton, Cotton Linters | .13 | .10 |
| 29 Paper, Paper Products | .49 | .05 |
| 35 Horticultural Material | .62 | .08 |
| IV NECESSARIES* | $ 1.51 | $ .00# |
| 04 Beverages and Liquors | .46 | .05 |
| 36 Sugar, Syrups and Molasses | .59 | .02 |
| 39 Vegetable Oil, Meal & Cake | 3.32 | .20 |
| 27 Packing House Products | 2.02 | .16 |
| 02 Bakery Goods, Confectionery | .32 | .06 |
| 09 Canned Goods | 2.11 | .05 |
| 18 Groceries | 1.62 | .06 |
| 10b Cereals, Flour, Mill Products | .32 | .02 |
| 17 Furniture and Furnishings | 1.68 | .04 |
| 31 Porcelain, China, etc. | 1.00 | .08 |
| 21 Leather and Leather Goods | 1.64 | .07 |
| 37 Textiles | .84 | .04 |
| 07 Boots and Shoes | 5.42 | .09 |
| 15 Dry Goods, Clothing | 1.02 | .06 |
| V AUXILIARIES* | $ .49 | $ .05 |
| 8a Masonry Materials (except wood) | .70 | .05 |
| 30 Petroleum, Crude and Refined | 2.74 | .02 |
| 28 Paints, Varnishes and Gums | 2.14 | .04 |
| 11 Chemicals | .83 | .06 |
| 40 Miscellaneous Commodities | .38 | .07 |
| VI ACCESSORIES* | $ 1.39 | $ .09 |
| 19 Iron and Steel, Structural | 1.11 | .08 |
| 20 Iron and Steel Articles | .49 | .06 |
| 24 Metals, Non-ferrous | .44 | .15 |
| 33 Rubber, rubber articles, tires | .54 | .06 |
| 23 Machinery, Vehicles, etc. | 2.18 | .16 |
| 32 Plumbing and Heating Supplies | .85 | .10 |
| 61 Automotive Vehicles and Parts | 1.42 | .12 |
| 05 Boats, Marine Equipment | 1.19 | .17 |
| 01 Books and Periodicals | .56 | .09 |
| 41 Department Store Merchandise | 1.43 | .08 |
| 38 Tobacco, Tobacco Products | 2.05 | .02 |
| 85 Musical Instruments and Supplies | 3.04 | .19 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Less than $.005.

## SECTION 25. POTENTIAL SERVICE

Analysis 25.1 Comparison of Container and Freight Car Handling Metropolitan Terminals - 1932.

| COMMODITY GROUPS | TRAM TRACK CARS ORIGINATED# (000) | TRAM TRACK CARS TERMINATED# (000) | TRAM TRACK CARS TOTAL (000) | AVERAGE LOAD TONS/ | CONTAINERS REQUIRED* (000) | AVERAGE NUMBER CONTAINERS PER CAR | ESTIMATED COST CONTAINER PER CAR* | ESTIMATED COST CONTAINER AGGREGATE (000) | FREIGHT CAR DRAYAGE* | FREIGHT CAR TRANSFER | FREIGHT CAR AGGREGATE (000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | 1,834 | 2,303 | 4,137 | 31 | 12,325 | 3.06 | $6.10 | $24,615 | $9.20 | $6.30 | $64,168 |
| I ROUGH MATERIAL** | 35 | 296 | 331 | 55 | 1,149 | 4.38 | 8.75 | 2,896 | 15.00 | 7.15 | 7,332 |
| Sand, Stone, Gravel | 35 | 296 | 331 | 55 | 1,149 | 4.38 | 8.75 | 2,896 | 15.00 | 7.15 | 7,332 |
| II RAW MATERIAL** | 1,334 | 933 | 2,267 | 41 | 6,853 | 3.02 | 6.05 | 13,715 | 9.70 | 6.30 | 36,249 |
| Bulk Grain and Beets | 227 | 48 | 275 | 42 | 1,078 | 3.92 | 7.85 | 2,159 | 12.00 | 6.30 | 5,033 |
| Perishables | 204 | 82 | 286 | 15 | 692 | 2.42 | 4.85 | 1,387 | 6.00 | 7.50 | 3,861 |
| Live Animals | 424 | 158 | 582 | 11 | 1,257 | 2.16 | 4.30 | 2,503 | 6.00 | 3.85 | 5,733 |
| Coal and Coke | 26 | 487 | 513 | 51 | 2,165 | 4.22 | 8.45 | 4,345 | 15.00 | 3.60 | 9,542 |
| Ores | 19 | 8 | 27 | 52 | 118 | 4.37 | 8.75 | 236 | 15.00 | 5.20 | 546 |
| Sulphur and Sulphuric Acid | 2 | 17 | 19 | 52 | 80 | 4.21 | 8.40 | 160 | 15.00 | 7.80 | 433 |
| Forest Products | 432 | 133 | 565 | 28 | 1,463 | 2.59 | 5.20 | 2,938 | 9.00 | 10.65 | 11,102 |
| III SEMIPROCESSED MATERIAL** | 207 | 100 | 307 | 17 | 738 | 2.38 | 4.75 | 1,458 | 4.65 | 4.20 | 2,721 |
| Cotton, Hay and Tobacco | 196 | 78 | 274 | 12 | 663 | 2.42 | 4.85 | 1,289 | 4.50 | 3.60 | 2,219 |
| Paper and Products | 11 | 22 | 33 | 23 | 69 | 2.10 | 4.20 | 139 | 6.00 | 9.20 | 502 |
| IV NECESSARIES** | 136 | 412 | 548 | 22 | 1,456 | 2.66 | 5.30 | 2,904 | 7.65 | 6.43 | 7,724 |
| Cereals | 18 | 224 | 242 | 23 | 656 | 2.71 | 5.40 | 1,307 | 7.50 | 4.60 | 2,928 |
| Miscellaneous Farm Products | 44 | 48 | 92 | 24 | 252 | 2.74 | 5.50 | 506 | 7.50 | 7.20 | 1,352 |
| Edible Animal Products | 28 | 31 | 59 | 13 | 149 | 2.53 | 5.05 | 298 | 6.00 | 5.20 | 661 |
| Oils, Vegetable and Animal | 25 | 31 | 56 | 27 | 165 | 2.94 | 5.90 | 330 | 9.00 | 9.45 | 1,033 |
| Manufactured Food | 18 | 69 | 87 | 28 | 214 | 2.46 | 4.90 | 426 | 9.00 | 9.80 | 1,636 |
| Textiles and Leather | 3 | 9 | 12 | 13 | 20 | 1.69 | 3.40 | 40 | 4.50 | 4.95 | 113 |
| V AUXILIARIES** | 70 | 361 | 431 | 27 | 1,294 | 3.00 | 6.00 | 2,586 | 8.35 | 7.09 | 6,656 |
| Petroleum and Products | 25 | 181 | 206 | 29 | 484 | 2.35 | 4.70 | 968 | 9.00 | 4.90 | 2,863 |
| Building Materials | 8 | 124 | 132 | 36 | 372 | 2.82 | 5.65 | 746 | 9.00 | 10.90 | 2,614 |
| Chemicals | 7 | 8 | 15 | 20 | 30 | 2.03 | 4.00 | 60 | 6.00 | 5.00 | 165 |
| Miscellaneous | 30 | 48 | 78 | 20 | 408 | 5.23 | 10.45 | 815 | 6.00 | 7.00 | 1,014 |
| VI ACCESSORIES** | 52 | 201 | 253 | 26 | 541 | 2.14 | 4.30 | 1,088 | 7.75 | 6.05 | 3,187 |
| Iron and Steel | 28 | 114 | 142 | 36 | 280 | 1.97 | 3.95 | 561 | 9.00 | 5.40 | 2,045 |
| Other Metals | 2 | 2 | 4 | 40 | 12 | 2.89 | 5.80 | 24 | 9.00 | 8.00 | 68 |
| Appliances | 17 | 47 | 64 | 12 | 116 | 1.82 | 3.65 | 230 | 6.00 | 7.20 | 845 |
| Glass and Tile | 5 | 38 | 43 | 18 | 133 | 3.10 | 6.20 | 267 | 6.00 | 6.30 | 529 |
| MAJOR AND MINOR TERMINALS - 1932 | | | | | | | | | | | |
| ALL GROUPS | 228 | 1,113 | 1,341 | 31 | 3,734 | 2.89 | $4.35 | $5,632 | $6.50 | $4.49 | $14,720 |
| I ROUGH MATERIAL** | 3 | 18 | 21 | 55 | 92 | 4.38 | 6.60 | 138 | 12.50 | 4.77 | 363 |
| Sand, Stone, Gravel | 3 | 18 | 21 | 55 | 92 | 4.38 | 6.60 | 138 | 12.50 | 4.77 | 363 |
| II RAW MATERIAL** | 112 | 582 | 694 | 41 | 1,941 | 2.90 | 4.20 | 2,915 | 6.95 | 4.49 | 7,939 |
| Bulk Grain and Beets | 1 | 32 | 33 | 42 | 129 | 3.92 | 5.90 | 193 | 10.00 | 4.20 | 459 |
| Perishables | 20 | 302 | 322 | 15 | 779 | 2.42 | 3.65 | 1,175 | 5.00 | 5.00 | 3,220 |
| Live Animals | 43 | 66 | 109 | 11 | 235 | 2.16 | 3.25 | 354 | 5.00 | 2.60 | 828 |
| Coal and Coke | 2 | 103 | 105 | 51 | 443 | 4.22 | 6.30 | 662 | 12.50 | 2.40 | 1,565 |
| Ores | 11 | 3 | 14 | 52 | 61 | 4.37 | 6.55 | 92 | 12.50 | 3.50 | 224 |
| Sulphur and Sulphuric Acid | 3 | 1 | 4 | 52 | 17 | 4.21 | 6.30 | 26 | 12.50 | 5.20 | 71 |
| Forest Products | 32 | 75 | 107 | 28 | 277 | 2.59 | 3.90 | 417 | 7.50 | 7.10 | 1,562 |
| III SEMIPROCESSED MATERIAL** | 18 | 52 | 70 | 17 | 153 | 2.19 | 3.30 | 231 | 4.70 | 5.19 | 691 |
| Cotton, Hay and Tobacco | 2 | 16 | 18 | 12 | 44 | 2.42 | 3.65 | 66 | 3.75 | 2.40 | 111 |
| Paper and Products | 16 | 36 | 52 | 23 | 109 | 2.10 | 3.15 | 164 | 5.00 | 6.15 | 580 |
| IV NECESSARIES** | 45 | 273 | 318 | 22 | 813 | 2.56 | 3.85 | 1,221 | 5.85 | 4.26 | 3,222 |
| Cereals | 5 | 47 | 52 | 23 | 141 | 2.71 | 4.05 | 211 | 6.25 | 3.10 | 486 |
| Miscellaneous Farm Products | 14 | 59 | 73 | 24 | 200 | 2.74 | 4.10 | 299 | 6.25 | 4.80 | 807 |
| Edible Animal Products | 6 | 112 | 118 | 13 | 299 | 2.53 | 3.80 | 488 | 5.00 | 3.50 | 1,003 |
| Oils, Vegetable and Animal | 1 | 5 | 6 | 27 | 18 | 2.94 | 3.05 | 27 | 7.50 | 6.30 | 83 |
| Manufactured Food | 11 | 40 | 51 | 28 | 125 | 2.46 | 3.70 | 189 | 7.50 | 6.55 | 717 |
| Textiles and Leather | 8 | 10 | 18 | 13 | 30 | 1.69 | 2.55 | 45 | 3.75 | 3.30 | 127 |
| V AUXILIARIES** | 23 | 88 | 111 | 27 | 470 | 4.23 | 6.35 | 705 | 5.75 | 4.92 | 1,186 |
| Petroleum and Products | 3 | 10 | 13 | 29 | 31 | 2.35 | 3.50 | 46 | 7.50 | 3.25 | 140 |
| Building Materials | 2 | 19 | 21 | 36 | 59 | 2.82 | 4.25 | 88 | 7.50 | 7.20 | 309 |
| Chemicals | 1 | 6 | 7 | 20 | 14 | 2.03 | 3.00 | 21 | 5.00 | 3.35 | 58 |
| Miscellaneous | 17 | 53 | 70 | 20 | 366 | 5.23 | 7.85 | 550 | 5.00 | 4.70 | 679 |
| VI ACCESSORIES** | 27 | 100 | 127 | 26 | 265 | 2.09 | 3.15 | 400 | 6.15 | 4.24 | 1,320 |
| Iron and Steel | 15 | 39 | 54 | 36 | 106 | 1.97 | 2.95 | 159 | 7.50 | 3.60 | 599 |
| Other Metals | 2 | 3 | 5 | 40 | 14 | 2.89 | 4.20 | 21 | 7.50 | 5.35 | 64 |
| Appliances | 8 | 44 | 52 | 12 | 95 | 1.82 | 2.75 | 143 | 5.00 | 4.80 | 510 |
| Glass and Tile | 2 | 14 | 16 | 18 | 50 | 3.10 | 4.65 | 75 | 5.00 | 4.20 | 147 |

# Total cars originated on tram tracks in 1932 apportioned between commodities on basis of one day's test.
/ All cars of this commodity 1932.
* Estimates based on load and density analysis of all carloads 1933, Field Studies and Truck Costs.
** Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
Total cars originated and terminated in U.S. on tram tracks, 1932 = 5,478,825 and on Dec. 13, 1933 = 10,637. Ratio of year 1932 to Dec. 13, 1933 = 515.0724.



## SECTION 26. EFFECT OF COMPLETE SERVICE

Analysis 26 1 Result of Highway Completeness

| BUSINESS GROUPS | TONS REPORTED BY SHIPPERS ALL SHIPPERS# TOTAL TONNAGE (000) | ALL SHIPPERS# HIGHWAY TONNAGE (000) | ALL SHIPPERS# PER CENT | SHIPPERS USING HIGHWAY PARTLY ACCOUNT OF COMPLETE SERVICE # TOTAL TONNAGE (000) | SHIPPERS USING HIGHWAY PARTLY ACCOUNT OF COMPLETE SERVICE # HIGHWAY TONNAGE (000) | SHIPPERS USING HIGHWAY PARTLY ACCOUNT OF COMPLETE SERVICE # PER CENT |
|---|---|---|---|---|---|---|
| ALL GROUPS | 290,203 | 16,275 | 6% | 15,581 | 1,499 | 10% |
| I ROUGH MATERIAL* | 12,350 | 1,683 | 14% | - | - | - |
| 34 Sand, Stone, Gravel | 12,060 | 1,670 | 14 | - | - | - |
| 8b Timber | 290 | 14 | 5 | - | - | - |
| II RAW MATERIAL* | 67,284 | 1,959 | 3% | 133 | 36 | 27% |
| 10aGrain | 3,068 | 3 | / | - | - | - |
| 16 Fresh Fruits and Vegetables | 2,436 | 482 | 20 | 32 | 11 | 35 |
| 22 Livestock and Poultry | 832 | 476 | 57 | 101 | 25 | 24 |
| 12 Coal, Coke and Fuel | 45,165 | 539 | 1 | - | - | - |
| 26 Ores and Concentrates | 8,463 | 48 | 1 | 5 | / | 4 |
| 8c Lumber | 6,833 | 318 | 5 | 75 | 20 | 27 |
| 03 Barrels, Cooperage Material | 487 | 93 | 19 | 20 | 4 | 20 |
| III SEMIPROCESSED MATERIAL* | 12,748 | 1,314 | 10% | 719 | 84 | 12% |
| 13 Cotton, Cotton Linters | 1,259 | 185 | 15 | - | - | - |
| 29 Paper, Paper Products | 11,439 | 1,123 | 10 | 718 | 84 | 12 |
| 35 Horticultural | 50 | 5 | 10 | 1 | / | 53 |
| IV NECESSARIES* | 50,748 | 3,869 | 8% | 962 | 250 | 26% |
| 04 Beverages and Liquors | 1,063 | 339 | 32 | 121 | 28 | 23 |
| 36 Sugar, Syrups and Molasses | 9,679 | 648 | 7 | - | - | - |
| 39 Vegetable Oil, Meal & Cake | 1,360 | 213 | 16 | - | - | - |
| 27 Packing House Products | 7,534 | 494 | 7 | 11 | 6 | 50 |
| 02 Bakery Goods, Confectionery | 1,486 | 258 | 17 | 110 | 15 | 13 |
| 09 Canned Goods | 2,342 | 299 | 13 | 57 | 28 | 50 |
| 18 Groceries | 2,362 | 544 | 23 | 210 | 97 | 46 |
| 10bCereals, Flour, Mill Products | 18,401 | 406 | 2 | 226 | 19 | 8 |
| 17 Furniture and Furnishings | 606 | 66 | 11 | 69 | 19 | 27 |
| 31 Porcelain, China, etc. | 152 | 6 | 4 | - | - | - |
| 21 Leather and Leather Goods | 927 | 77 | 8 | 94 | 21 | 23 |
| 37 Textiles | 4,166 | 433 | 10 | 36 | 8 | 23 |
| 07 Beets and Shoes | 506 | 50 | 10 | 24 | 9 | 38 |
| 15 Dry Goods, Clothing | 163 | 37 | 23 | 5 | 1 | 24 |
| V AUXILIARIES* | 98,280 | 4,192 | 4% | 3,695 | 356 | 10% |
| 6a Masonry Materials (except wood) | 17,756 | 830 | 5 | 589 | 72 | 12 |
| 30 Petroleum, Crude and Refined | 37,422 | 1,249 | 3 | 8 | 2 | 32 |
| 28 Paints, Varnishes and Gums | 197 | 36 | 18 | 47 | 8 | 17 |
| 11 Chemicals | 6,807 | 322 | 5 | 197 | 30 | 15 |
| 40 Miscellaneous Commodities | 36,098 | 1,755 | 5 | 2,859 | 244 | 9 |
| VI ACCESSORIES* | 48,793 | 3,258 | 7% | 10,067 | 772 | 8% |
| 19 Iron and Steel, Structural | 11,363 | 226 | 2 | 221 | 14 | 6 |
| 20 Iron and Steel Articles | 19,935 | 998 | 5 | 5,597 | 114 | 7 |
| 24 Metals, Nonferrous | 1,921 | 216 | 11 | 184 | 15 | 8 |
| 33 Rubber, Rubber Articles, Tires | 1,584 | 213 | 13 | 47 | 7 | 15 |
| 23 Machinery, Vehicles, etc. | 4,974 | 205 | 4 | 1,889 | 42 | 2 |
| 32 Plumbing and Heating Supplies | 529 | 21 | 4 | - | - | - |
| 01 Automotive Vehicles and Parts | 6,331 | 1,253 | 20 | 5,571 | 539 | 10 |
| 05 Boats, Marine Equipment | 154 | 1 | 1 | 1 | / | 6 |
| 06 Books and Periodicals | 821 | 55 | 7 | 521 | 20 | 4 |
| 14 Department Store Merchandise | 466 | 37 | 8 | 33 | 20 | 61 |
| 38 Tobacco, Tobacco Products | 710 | 32 | 5 | 4 | 16 | 46 |
| 25 Musical Instruments and Supplies | 5 | / | 3 | / | / | 33 |

* Where commodities of two groups have been combined the total is placed under the group in which the predominant commodity falls. #As reported by respondents to Shippers' Inquiry.
/ Less than 1/2% / Less than 500 tons.

SECTION 30. EFFECT OF CORRELATION

Analysis 30.1 Result of Highway Regular Schedules

| BUSINESS GROUPS | TONS REPORTED BY SHIPPERS — ALL SHIPPERS# TOTAL TONNAGE (000) | ALL SHIPPERS# HIGHWAY TONNAGE (000) | ALL SHIPPERS# PER CENT | SHIPPERS USING HIGHWAY ON ACCOUNT REGULAR SCHEDULES# TOTAL TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT REGULAR SCHEDULES# HIGHWAY TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT REGULAR SCHEDULES# PER CENT |
|---|---|---|---|---|---|---|
| ALL GROUPS | 290,203 | 16,275 | 6% | 32,349 | 3,178 | 10% |
| I ROUGH MATERIAL* | 12,350 | 1,683 | 14% | 213 | 156 | 73% |
| 34 Sand, Stone, Gravel | 12,060 | 1,670 | 14 | 212 | 155 | 73 |
| 8b Timber | 290 | 14 | 5 | 1 | 1 | 53 |
| II RAW MATERIAL* | 67,284 | 1,959 | 3% | 2,286 | 72 | 3% |
| 10aGrain | 3,068 | 3 | ∮ | - | - | - |
| 16 Fresh Fruits and Vegetables | 2,436 | 482 | 20 | 46 | 11 | 25 |
| 22 Livestock and Poultry | 832 | 476 | 57 | 11 | 3 | 28 |
| 12 Coal, Coke and Fuel | 45,165 | 539 | 1 | 401 | 16 | 4 |
| 26 Ores and Concentrates | 8,463 | 48 | 1 | 1,640 | 17 | 1 |
| 8c Lumber | 6,833 | 318 | 5 | 136 | 20 | 15 |
| 03 Barrels, Cooperage Material | 487 | 93 | 19 | 52 | 4 | 7 |
| III SEMIPROCESSED MATERIAL* | 12,748 | 1,314 | 10% | 2,261 | 596 | 26% |
| 13 Cotton, Cotton Linters | 1,259 | 185 | 15 | 29 | 24 | 83 |
| 29 Paper, Paper Products | 11,439 | 1,123 | 10 | 2,231 | 571 | 26 |
| 35 Horticultural Material | 50 | 5 | 10 | 1 | 1 | 53 |
| IV NECESSARIES* | 50,748 | 3,869 | 8% | 9,638 | 1,010 | 10% |
| 04 Beverages and Liquors | 1,063 | 339 | 32 | 190 | 169 | 89 |
| 36 Sugar, Syrups and Molasses | 9,679 | 648 | 7 | - | - | - |
| 39 Vegetable Oil, Meal and Cake | 1,360 | 213 | 16 | 10 | 7 | 74 |
| 27 Packing House Products | 7,534 | 494 | 7 | 3,931 | 360 | 9 |
| 02 Bakery Goods, Confectionery | 1,486 | 258 | 17 | 184 | 24 | 13 |
| 09 Canned Goods | 2,342 | 299 | 13 | 453 | 36 | 8 |
| 18 Groceries | 2,362 | 544 | 23 | 283 | 241 | 85 |
| 10bCereals, Flour, Mill Products | 18,401 | 406 | 2 | 474 | 67 | 14 |
| 17 Furniture and Furnishings | 606 | 66 | 11 | 118 | 32 | 27 |
| 31 Porcelain, China, etc. | 152 | 6 | 4 | - | - | - |
| 21 Leather and Leather Goods | 927 | 77 | 8 | 34 | 5 | 16 |
| 37 Textiles | 4,166 | 433 | 10 | 3,931 | 49 | 1 |
| 07 Boots and Shoes | 506 | 50 | 10 | 16 | 15 | 93 |
| 15 Dry Goods, Clothing | 163 | 37 | 23 | 14 | 4 | 31 |
| V AUXILIARIES* | 98,280 | 4,192 | 4% | 12,125 | 822 | 7% |
| 8a Masonry Materials (except wood) | 17,756 | 830 | 5 | 1,175 | 215 | 18 |
| 30 Petroleum, crude and refined | 37,422 | 1,249 | 3 | 5,812 | 285 | 5 |
| 28 Paints, Varnishes and Gums | 197 | 36 | 18 | ∮ | ∮ | 33 |
| 11 Chemicals | 6,807 | 322 | 5 | 1,128 | 112 | 10 |
| 40 Miscellaneous Commodities | 36,098 | 1,755 | 5 | 4,009 | 211 | 5 |
| VI ACCESSORIES* | 48,793 | 3,258 | 7% | 5,827 | 520 | 9% |
| 19 Iron and Steel, Structural | 11,363 | 226 | 2 | 342 | 167 | 49 |
| 20 Iron and Steel Articles | 19,935 | 998 | 5 | 3,670 | 114 | 3 |
| 24 Metals, Nonferrous | 1,921 | 216 | 11 | 738 | 54 | 7 |
| 33 Rubber, rubber articles, tires | 1,584 | 213 | 13 | 104 | 28 | 27 |
| 23 Machinery, Vehicles, etc. | 4,974 | 205 | 4 | 152 | 18 | 12 |
| 32 Plumbing and Heating Supplies | 529 | 21 | 4 | 13 | 6 | 44 |
| 01 Automotive Vehicles and Parts | 6,331 | 1,253 | 20 | 732 | 118 | 16 |
| 05 Boats, Marine Equipment | 154 | 1 | 1 | ∮ | ∮ | 10 |
| 06 Books and Periodicals | 821 | 55 | 7 | 18 | 8 | 44 |
| 14 Department Store Merchandise | 466 | 37 | 8 | 51 | 7 | 14 |
| 38 Tobacco, Tobacco Products | 710 | 32 | 5 | 7 | 1 | 14 |
| 25 Musical Instruments and Supplies | 5 | - | 3 | - | - | - |

*Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls. #As reported by respondents to Shippers' Inquiry.
∮Less than 500 tons. ∮Less than 1/2%



SECTION 30. EFFECT OF CORRELATION

Analysis 30.2 Result of Highway Convenient Schedules

| BUSINESS GROUPS | TONS REPORTED BY SHIPPERS — ALL SHIPPERS# TOTAL TONNAGE (000) | ALL SHIPPERS# HIGHWAY TONNAGE (000) | ALL SHIPPERS# PER CENT | SHIPPERS USING HIGHWAY ON ACCOUNT OF CONVENIENT SCHEDULES# TOTAL TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT OF CONVENIENT SCHEDULES# HIGHWAY TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT OF CONVENIENT SCHEDULES# PER CENT |
|---|---|---|---|---|---|---|
| ALL GROUPS | 290,203 | 16,275 | 6% | 36,088 | 4,184 | 12% |
| I ROUGH MATERIAL* | 12,350 | 1,683 | 14% | 540 | 335 | 62% |
| 34 Sand, Stone, Gravel | 12,060 | 1,670 | 14 | 539 | 334 | 62 |
| 8b Timber | 290 | 14 | 5 | 1 | 1 | 53 |
| II RAW MATERIAL* | 67,284 | 1,959 | 3% | 4,068 | 203 | 5% |
| 10aGrain | 3,068 | 3 | ∮ | - | - | - |
| 16 Fresh Fruits and Vegetables | 2,436 | 482 | 20 | 162 | 66 | 41 |
| 22 Livestock and Poultry | 832 | 476 | 57 | 33 | 21 | 63 |
| 12 Coal, Coke and Fuel | 45,165 | 539 | 1 | 523 | 12 | 2 |
| 26 Ores and Concentrates | 8,463 | 48 | 1 | 2,472 | 19 | 1 |
| 8c Lumber | 6,833 | 318 | 5 | 814 | 56 | 7 |
| 03 Barrels, Cooperage Material | 487 | 93 | 19 | 64 | 29 | 45 |
| III SEMIPROCESSED MATERIAL* | 12,748 | 1,314 | 10% | 2,352 | 231 | 10% |
| 13 Cotton, Cotton Linters | 1,259 | 185 | 15 | 122 | 26 | 21 |
| 29 Paper, Paper Products | 11,439 | 1,123 | 10 | 2,228 | 204 | 9 |
| 35 Horticultural Material | 50 | 5 | 10 | 2 | 1 | 41 |
| IV NECESSARIES* | 50,748 | 3,869 | 8% | 9,617 | 1,261 | 13% |
| 04 Beverages and Liquors | 1,063 | 339 | 32 | 376 | 170 | 45 |
| 36 Sugar, Syrups and Molasses | 9,679 | 648 | 7 | 294 | 48 | 16 |
| 39 Vegetable Oil, meal and cake | 1,360 | 213 | 16 | 75 | 8 | 10 |
| 27 Packing House Products | 7,534 | 494 | 7 | 6,173 | 421 | 7 |
| 02 Bakery Goods, Confectionery | 1,486 | 258 | 17 | 265 | 39 | 15 |
| 09 Canned Goods | 2,342 | 299 | 13 | 980 | 75 | 13 |
| 18 Groceries | 2,362 | 544 | 23 | 302 | 160 | 53 |
| 10bCereals, Flour and Mill Products | 18,401 | 406 | 2 | 692 | 138 | 20 |
| 17 Furniture and Furnishings | 606 | 66 | 11 | 174 | 41 | 24 |
| 31 Porcelain, China, etc. | 152 | 6 | 4 | - | - | - |
| 21 Leather and Leather Goods | 927 | 77 | 8 | 58 | 16 | 28 |
| 37 Textiles | 4,166 | 433 | 10 | 480 | 87 | 18 |
| 07 Boots and Shoes | 506 | 50 | 10 | 152 | 49 | 32 |
| 15 Dry Goods, Clothing | 163 | 37 | 23 | 16 | 9 | 54 |
| V AUXILIARIES* | 98,280 | 4,192 | 4% | 13,653 | 1,308 | 10% |
| 8a Masonry Materials (except wood) | 17,756 | 830 | 5 | 2,101 | 407 | 19 |
| 30 Petroleum, crude and refined | 37,422 | 1,249 | 3 | 7,494 | 371 | 5 |
| 28 Paints, Varnishes and Gums | 197 | 36 | 18 | 38 | 12 | 30 |
| 11 Chemicals | 6,807 | 322 | 5 | 1,157 | 121 | 11 |
| 40 Miscellaneous Commodities | 36,098 | 1,755 | 5 | 2,863 | 398 | 14 |
| VI ACCESSORIES* | 48,793 | 3,258 | 7% | 5,859 | 847 | 14% |
| 19 Iron and Steel, Structural | 11,363 | 226 | 2 | 313 | 117 | 37 |
| 20 Iron and Steel Articles | 19,935 | 998 | 5 | 2,649 | 277 | 10 |
| 24 Metals, Nonferrous | 1,921 | 216 | 11 | 600 | 58 | 10 |
| 33 Rubber, rubber articles, tires | 1,584 | 213 | 13 | 95 | 17 | 18 |
| 23 Machinery, Vehicles, etc. | 4,974 | 205 | 4 | 451 | 64 | 13 |
| 32 Plumbing and Heating Supplies | 529 | 21 | 4 | 13 | 5 | 40 |
| 01 Automotive Vehicles and Parts | 6,331 | 1,253 | 20 | 1,276 | 265 | 21 |
| 05 Boats, Marine Equipment | 154 | 1 | 1 | ∮ | ∮ | 10 |
| 06 Books and Periodicals | 821 | 55 | 7 | 376 | 33 | 9 |
| 14 Department Store Merchandise | 466 | 37 | 8 | 38 | 8 | 20 |
| 38 Tobacco, Tobacco Products | 710 | 32 | 5 | 7 | 2 | 24 |
| 25 Musical Instruments and Supplies | 5 | ∮ | 3 | - | - | - |

*Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls. #As reported by respondents to Shippers' Inquiry.
∮Less than 500 tons. ∮Less than 1/2%

## SECTION 32. PRESENT ADAPTNESS

### Analysis 32.1 Shippers' Cost for Packing and Loading Rail Shipments

| | SHIPPERS' COST PER TON | |
|---|---|---|
| | PACKING AND CRATING * | LOADING AND UNLOADING |
| ALL GROUPS | $ 1.705 | $ .354 |
| I ROUGH MATERIAL* | $ .072 | $ .127 |
| 34 Sand, Stone, Gravel | .068 | .099 |
| 8b Timber | .486 | .271 |
| II RAW MATERIAL* | $ 1.752 | $ .269 |
| 10a Grain | .137 | .082 |
| 16 Fresh Fruits and Vegetables | 10.313 | .642 |
| 22 Livestock and Poultry | 3.020 | .325 |
| 12 Coal, Coke and Fuel | .031 | .066 |
| 26 Ores and Concentrates | .123 | .105 |
| 8e Lumber | .584 | .740 |
| 03 Barrels, Cooperage Material | .527 | .240 |
| III SEMIPROCESSED MATERIAL* | $ 1.845 | $ .362 |
| 13 Cotton, Cotton Linters | 2.159 | .437 |
| 29 Paper, Paper Products | 1.748 | .357 |
| 35 Horticultural Material | 4.700 | 1.914 |
| IV NECESSARIES* | $ 4.243 | $ .460 |
| 04 Beverages and Liquors | .218 | .089 |
| 36 Sugar, Syrups and Molasses | 1.112 | .120 |
| 39 Vegetable Oil, Meal and Cake | .919 | .166 |
| 27 Packing House Products | 9.814 | 1.090 |
| 02 Bakery Goods, Confectionery | 7.214 | .119 |
| 09 Canned Goods | .438 | .286 |
| 18 Groceries | 2.093 | .372 |
| 10b Cereals, Flour, Mill Products | .553 | .198 |
| 17 Furniture and Furnishings | 4.995 | .699 |
| 31 Porcelain, China, etc. | 4.569 | 1.637 |
| 21 Leather and Leather Goods | 4.482 | .853 |
| 37 Textiles | 2.372 | .422 |
| 07 Boots and Shoes | 3.086 | .743 |
| 15 Dry Goods, Clothing | .660 | .523 |
| V AUXILIARIES* | $ .343 | $ .207 |
| 8a Masonry Materials (except wood) | .258 | .304 |
| 30 Petroleum, Crude and Refined | .039 | .176 |
| 28 Paints, Varnishes and Gums | .286 | .592 |
| 11 Chemicals | .313 | .095 |
| 40 Miscellaneous Commodities | .653 | .270 |
| VI ACCESSORIES* | $ 1.869 | $ .447 |
| 19 Iron and Steel, Structural | .352 | .125 |
| 20 Iron and Steel Articles | .403 | .169 |
| 24 Metals, Non-ferrous | 3.242 | .531 |
| 33 Rubber, rubber articles, tires | 3.090 | .288 |
| 23 Machinery, Vehicles, etc. | 10.420 | 1.071 |
| 32 Plumbing and Heating Supplies | 7.257 | .251 |
| 01 Automotive Vehicles and Parts | 1.398 | .647 |
| 05 Boats, Marine Equipment | 1.885 | .917 |
| 06 Books and Periodicals | 2.510 | .275 |
| 14 Department Store Merchandise | 3.141 | .662 |
| 38 Tobacco, Tobacco Products | .698 | .322 |
| 25 Musical Instruments and Supplies | 2.283 | .040 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.



## SECTION 34. EFFECT OF ADAPTNESS

### Analysis 34.1 Result of Highway Liberal Packing Requirements

| BUSINESS GROUPS | TONS REPORTED BY SHIPPERS | | | | | |
|---|---|---|---|---|---|---|
| | ALL SHIPPERS# | | | SHIPPERS USING HIGHWAY ON ACCOUNT OF LIBERAL PACKING ø | | |
| | TOTAL TONNAGE (000) | HIGHWAY TONNAGE (000) | PER CENT | TOTAL TONNAGE (000) | HIGHWAY TONNAGE (000) | PER CENT |
| ALL GROUPS | 290,203 | 16,275 | 6% | 35,928 | 4,566 | 13% |
| I ROUGH MATERIAL* | 12,350 | 1,683 | 14% | 211 | 81 | 38% |
| 34 Sand, Stone, Gravel | 12,060 | 1,670 | 14 | 211 | 81 | 38 |
| 8b Timber | 290 | 14 | 5 | - | - | - |
| II RAW MATERIAL* | 67,284 | 1,959 | 3% | 1,606 | 200 | 12% |
| 10a Grain | 3,068 | 3 | / | 425 | 3 | 1 |
| 16 Fresh Fruits and Vegetables | 2,436 | 482 | 20 | 185 | 23 | 12 |
| 22 Livestock and Poultry | 832 | 476 | 57 | 11 | 3 | 27 |
| 12 Coal, Coke and Fuel | 45,165 | 539 | 1 | 494 | 12 | 2 |
| 26 Ores and Concentrates | 8,463 | 48 | 1 | - | - | - |
| 8e Lumber | 6,835 | 318 | 5 | 431 | 130 | 30 |
| 03 Barrels, Cooperage Material | 487 | 93 | 19 | 61 | 30 | 49 |
| III SEMIPROCESSED MATERIAL* | 12,748 | 1,314 | 10% | 1,196 | 185 | 16% |
| 13 Cotton, Cotton Linters | 1,259 | 185 | 15 | 21 | 19 | 90 |
| 29 Paper, Paper Products | 11,439 | 1,123 | 10 | 1,174 | 166 | 14 |
| 35 Horticultural Material | 50 | 5 | 10 | 1 | / | 33 |
| IV NECESSARIES* | 50,748 | 3,869 | 8% | 9,875 | 1,117 | 11% |
| 04 Beverages and Liquors | 1,063 | 339 | 32 | 492 | 171 | 35 |
| 36 Sugar, Syrups and Molasses | 9,679 | 648 | 7 | 9 | 3 | 38 |
| 39 Vegetable Oil, meal and cake | 1,360 | 213 | 16 | - | - | - |
| 27 Packing House Products | 7,534 | 494 | 7 | 6,917 | 435 | 6 |
| 02 Bakery Goods, Confectionery | 1,486 | 258 | 17 | 1,158 | 199 | 17 |
| 09 Canned Goods | 2,342 | 299 | 13 | 403 | 40 | 10 |
| 18 Groceries | 2,362 | 544 | 23 | 253 | 143 | 56 |
| 10b Cereals, Flour, Mill Products | 18,401 | 406 | 2 | 142 | 19 | 13 |
| 17 Furniture and Furnishings | 606 | 66 | 11 | 237 | 48 | 20 |
| 31 Porcelain, China, etc. | 152 | 6 | 4 | 1 | 1 | 59 |
| 21 Leather and Leather Goods | 527 | 77 | 15 | 15 | 9 | 60 |
| 37 Textiles | 4,166 | 433 | 10 | 125 | 30 | 24 |
| 07 Boots and Shoes | 506 | 50 | 10 | 104 | 15 | 15 |
| 15 Dry Goods, Clothing | 163 | 37 | 23 | 17 | 4 | 26 |
| V AUXILIARIES* | 98,280 | 4,192 | 4% | 12,366 | 1,699 | 14% |
| 8a Masonry Materials (except wood) | 17,756 | 830 | 5 | 1,066 | 168 | 16 |
| 30 Petroleum, crude and refined | 37,122 | 1,249 | 3 | 7,527 | 464 | 6 |
| 28 Paints, Varnishes and Gums | 197 | 36 | 18 | 32 | 8 | 26 |
| 11 Chemicals | 6,807 | 322 | 5 | 818 | 106 | 13 |
| 40 Miscellaneous Commodities | 36,098 | 1,755 | 5 | 2,893 | 653 | 23 |
| VI ACCESSORIES* | 48,793 | 3,258 | 7% | 10,674 | 1,284 | 12% |
| 19 Iron and Steel, Structural | 11,363 | 226 | 2 | 590 | 124 | 21 |
| 20 Iron and Steel Articles | 19,935 | 998 | 5 | 4,511 | 237 | 5 |
| 24 Metals, Non-ferrous | 1,921 | 216 | 11 | 603 | 66 | 11 |
| 33 Rubber, rubber articles, tires | 1,584 | 213 | 13 | 520 | 48 | 9 |
| 23 Machinery, Vehicles, etc. | 4,974 | 205 | 4 | 205 | 32 | 16 |
| 32 Plumbing and Heating Supplies | 529 | 21 | 4 | 29 | 6 | 20 |
| 01 Automotive Vehicles and Parts | 6,331 | 1,253 | 20 | 3,972 | 734 | 18 |
| 05 Boats, Marine Equipment | 154 | 1 | 1 | 1 | 1 | 65 |
| 06 Books and Periodicals | 821 | 55 | 7 | 193 | 29 | 15 |
| 14 Department Store Merchandise | 466 | 37 | 8 | 43 | 6 | 13 |
| 38 Tobacco, Tobacco Products | 710 | 32 | 5 | 6 | 1 | 17 |
| 25 Musical Instruments and Supplies | 5 | / | 3 | / | / | 9 |

* Where commodities of two groups have been combined the total is placed under the group in which the predominant commodity falls.
# As reported by respondents to Shippers' Inquiry.
ø As reported by respondents to Shippers' Inquiry.
/ Less than 500 tons.
/ Less than 1/2%.

SECTION 38. PRESENT SALES UNIT

Analysis 38.1 Shippers' Report of Comparative Average Carloads in Tons

| COMMODITY GROUP | SHIPPERS' REPORTS: # AVERAGE LOAD | OUTBOUND # SHIPMENTS AVERAGE LOAD: RAIL-WAY | HIGH-WAY | WATER | INBOUND # SHIPMENTS AVERAGE LOAD: RAIL-WAY | HIGH-WAY | WATER | INBOUND FUEL # SHIPMENTS AVERAGE LOAD: RAIL-WAY | HIGH-WAY | WATER | RATIO # CAR LOAD MINIMUM WEIGHT TO HIGH-WAY LOAD | RATIO RAIL-WAY LOAD TO HIGH-WAY LOAD | # SPACE REQUIRED FOR HIGH-WAY LOAD CU.FT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | 35 | 29 | 6.2 | 128 | 27 | 5.2 | 163 | 48 | 8.1 | 512 | 3.1 | 4.7 | 306 |
| I ROUGH MATERIAL | 48 | 52 | 6.0 | 900 | 43 | 6.5 | 4,078 | 47 | 6.1 | 7,157 | 3.8 | 8.7 | 114 |
| 34 Sand, Stone, Gravel | 55 | 53 | 6.1 | 1,798 | 47 | 6.7 | 4,078 | 47 | 6.1 | 7,157 | 4.1 | 8.7 | 114 |
| 8b Timber | 35 | 33 | 5.5 | 7 | 32 | 5.6 | - | 32 | - | - | 3.1 | 5.9 | 306 |
| II RAW MATERIAL* | 43 | 37 | 5.8 | 69 | 32 | 4.1 | 25 | 42 | 8.2 | 1,584 | 3.4 | 6.4 | 273 |
| 10a Grain | 41 | 35 | 8.0 | 4,118 | 41 | 6.3 | 48 | 41 | - | - | 3.8 | 4.3 | 360 |
| 16 Fresh Fruit & Vegetables | 20 | 17 | 6.4 | 19 | 14 | 5.5 | 19 | 34 | 5.3 | - | 1.9 | 2.5 | 366 |
| 22 Livestock & Poultry | 11 | 9 | 3.2 | 10 | 11 | 2.6 | 8 | 41 | 7.9 | - | 1.6 | 2.8 | 640 |
| 12 Coal, Coke & Fuel | 52 | 40 | 5.6 | 39 | 34 | 11.7 | 12 | 42 | 8.4 | 5,067 | 3.6 | 7.2 | 200 |
| 26 Ores & Concentrates | 55 | 39 | 8.2 | 232 | 49 | 5.8 | - | 48 | 6.3 | 80 | 3.0 | 4.6 | 150 |
| 8a Lumber | 26 | 27 | 9.5 | 81 | 30 | 5.7 | 41 | 46 | 11.8 | 75 | 2.0 | 2.8 | 783 |
| 03 Barrels, Cooperage | 24 | 13 | 3.0 | 16 | 23 | 8.1 | 194 | 45 | 5.3 | 33 | 6.0 | 4.3 | 250 |
| III SEMIPROCESSED MATERIAL* | 23 | 21 | 7.0 | 21 | 23 | 6.1 | 70 | 46 | 11.4 | 600 | 1.5 | 3.0 | 452 |
| 13 Cotton, Cotton Linters | 14 | 22 | 5.7 | 52 | 8 | 4.1 | 100 | 50 | 7.6 | - | 1.2 | 3.9 | 570 |
| 29 Paper, Paper Products | 27 | 21 | 7.2 | 19 | 28 | 7.0 | 70 | 46 | 11.6 | 600 | 2.5 | 2.8 | 418 |
| 35 Horticultural Material | 26 | 24 | 5.0 | 33 | 20 | 5.5 | 33 | 51 | - | - | 3.0 | 4.8 | 345 |
| IV NECESSARIES* | 20 | 18 | 5.7 | 30 | 27 | 5.8 | 67 | 47 | 8.9 | 344 | 2.8 | 3.2 | 362 |
| 04 Beverages & Liquors | 18 | 15 | 7.6 | 64 | 18 | 4.9 | 22 | 42 | 7.4 | 320 | 2.0 | 2.0 | 400 |
| 36 Sugar, Syrups & Molasses | 33 | 21 | 5.8 | 34 | 47 | 5.1 | 568 | 47 | 4.1 | 756 | 3.1 | 3.6 | 258 |
| 39 Vegetable Oil, Meal & Cake | 27 | 24 | 5.7 | 27 | 28 | 4.6 | 395 | 51 | 13.2 | - | 3.1 | 4.2 | 259 |
| 27 Packing House Products | 14 | 13 | 5.7 | 15 | 11 | 3.9 | 154 | 52 | 11.0 | 220 | 1.8 | 2.3 | 407 |
| 02 Bakery Goods, Confectionery | - | 19 | 6.6 | 20 | 20 | 7.3 | 19 | 57 | 5.7 | 2 | 2.3 | 2.7 | 328 |
| 09 Canned Goods | 23 | 22 | 9.1 | 19 | 16 | 8.9 | 93 | 47 | 6.2 | 503 | 2.0 | 2.4 | 442 |
| 18 Groceries | 23 | 22 | 4.5 | 22 | 21 | 6.6 | 18 | 50 | 7.1 | - | 4.4 | 4.9 | 237 |
| 10b Cereals, Flour | 22 | 23 | 6.7 | 51 | 32 | 6.4 | 40 | 38 | 5.1 | 1,070 | 3.0 | 3.3 | 371 |
| 17 Furniture & Furnishings | 8 | 8 | 4.7 | 7 | 21 | 9.4 | 26 | 46 | 7.7 | 56 | 1.5 | 1.7 | 340 |
| 31 Porcelain, China, etc. | - | 17 | 3.4 | 11 | 14 | 2.3 | 50 | 45 | 18.1 | - | 3.5 | 4.7 | 378 |
| 21 Leather & Leather Goods | 22 | 17 | 7.1 | 18 | 25 | 8.2 | 17 | 48 | 12.1 | 205 | 1.3 | 2.4 | 374 |
| 37 Textiles | 13 | 8 | 5.5 | 8 | 24 | 6.0 | 320 | 51 | 9.6 | 43 | 2.7 | 1.5 | 366 |
| 07 Boots & Shoes | - | 14 | 6.9 | 43 | 14 | 8.0 | 32 | 17 | 12.1 | 40 | 1.7 | 1.9 | 115 |
| 15 Dry Goods, Clothing | - | 7 | 8.8 | 23 | 9 | 8.9 | 29 | 45 | 7.8 | 5 | 1.7 | .8 | 117 |
| V AUXILIARIES* | 28 | 31 | 5.6 | 417 | 30 | 5.5 | 431 | 51 | 8.0 | 428 | 2.6 | 5.5 | 333 |
| 8a Masonry Materials | 34 | 31 | 8.2 | 101 | 31 | 6.6 | 208 | 52 | 7.4 | 340 | 3.0 | 3.8 | 200 |
| 30 Petroleum, Crude & Refined | 29 | 29 | 10.6 | 664 | 30 | 7.7 | 3,788 | 48 | 6.5 | 932 | 1.4 | 2.7 | 400 |
| 28 Paints, Varnishes & Gums | 22 | 15 | 4.0 | 19 | 16 | 5.3 | 25 | 46 | 4.9 | - | 3.7 | 3.8 | 178 |
| 11 Chemicals | 37 | 37 | 7.1 | 14 | 35 | 8.4 | 1,035 | 47 | 6.7 | 330 | 2.5 | 5.2 | 222 |
| 40 Miscellaneous Commodities | 22 | 27 | 3.4 | 272 | 28 | 4.9 | 72 | 51 | 8.5 | 419 | 3.5 | 7.9 | 378 |
| VI ACCESSORIES* | 29 | 21 | 6.8 | 33 | 26 | 5.3 | 394 | 45 | 6.9 | 558 | 2.4 | 3.6 | 341 |
| 19 Iron & Steel, Structural | 33 | 30 | 7.1 | 100 | 45 | 3.6 | 4,921 | 46 | 7.1 | 809 | 2.5 | 4.2 | 85 |
| 20 Iron & Steel Articles | 45 | 32 | 10.0 | 120 | 39 | 7.2 | 381 | 42 | 6.3 | 817 | 1.8 | 3.1 | 160 |
| 24 Metals, non-ferrous | 40 | 37 | 7.9 | 200 | 28 | 3.4 | 33 | 45 | 7.0 | 223 | 2.3 | 4.6 | 74 |
| 33 Rubber, Articles, Tires | 22 | 12 | 6.8 | 13 | 24 | 5.8 | 22 | 48 | 9.0 | 375 | 1.5 | 1.7 | 567 |
| 23 Machinery, Vehicles, etc. | 18 | 12 | 4.8 | 12 | 17 | 4.8 | 23 | 45 | 6.4 | 95 | 2.5 | 2.3 | 185 |
| 32 Plumbing & Heating Supplies | - | 15 | 8.8 | 23 | 37 | 6.5 | 39 | 44 | 6.2 | 18 | 1.7 | 1.6 | 500 |
| 01 Automotive Vehicles & Parts | 11 | 8 | 5.1 | 8 | 11 | 4.7 | 1,155 | 49 | 5.9 | 710 | 2.4 | 1.4 | 468 |
| 05 Boats, Marine Equipment | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 06 Books & Periodicals | - | 15 | 7.2 | 12 | 26 | 7.6 | 59 | 30 | - | - | 2.1 | 2.1 | 320 |
| 14 Department Store Mdse | - | 20 | 7.5 | 23 | 21 | 4.2 | 21 | 46 | 6.2 | - | 2.0 | 2.7 | 937 |
| 38 Tobacco, Tobacco Products | 12 | 14 | 7.7 | 20 | 16 | 8.1 | 14 | 53 | 5.5 | - | 1.6 | 1.8 | 670 |
| 25 Musical Instruments | - | - | - | - | - | - | - | - | - | - | - | - | - |

# Tons ÷ Cars, ICC Commodity Statistics 1933. # As reported by respondents to Shippers' Inquiry.
# Average Carload Minimum Weight from Consolidated Classification No.9. # Based on average density of commodity. * Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.



SECTION 38. PRESENT SALES UNIT

Analysis 38.2 Minimum Tender Requirements of Pipe Lines - 1932

| MINIMUM IN TONS | ALL LINES COMPANIES | ALL LINES TONNAGE (000) | ATLANTIC COAST COMPANIES | ATLANTIC COAST TONNAGE (000) | GREAT LAKES SOUTHWEST COMPANIES | GREAT LAKES SOUTHWEST TONNAGE (000) | SOUTHWEST GULF COMPANIES | SOUTHWEST GULF TONNAGE (000) |
|---|---|---|---|---|---|---|---|---|
| CRUDE PETROLEUM | | | | | | | | |
| 15,500 | 20 | 113,135 | 4 | 4,451 | 8 | 41,420 | 8 | 67,264 |
| 11,625 | 9 | 10,916 | 6 | 4,533 | 3 | 6,383 | 0 | 0 |
| 7,750 | 4 | 15,908 | 3 | 3,315 | 1 | 12,593 | 0 | 0 |
| 3,875 | 11 | 44,994 | 0 | 0 | 3 | 25,325 | 8 | 19,669 |
| 1,550 | 3 | 28,677 | 1 | 1,423 | 1 | 2,303 | 1 | 24,951 |
| 775 | 8 | 29,660 | 4 | 4,902 | 2 | 15,442 | 2 | 9,316 |
| 155 | 3 | 8,157 | 2 | 2,656 | 1 | 5,501 | 0 | 0 |
| 46 | 1 | 1,656 | 1 | 1,656 | 0 | 0 | 0 | 0 |
| None | 3 | 1,575 | 2 | 1,567 | 0 | 0 | 1 | 8 |
| WEIGHTED AVERAGE | | | | | | | | |
| 8,823 | - | - | - | - | - | - | - | - |
| GASOLINE | | | | | | | | |
| 7,750 | 3 | 3,113 | 1 | 836 | 2 | 2,277 | 0 | 0 |

Note: Tonnage figures contain duplicates where companies published two or more minimum tender requirements for separate portions of their lines and did not report tonnage handled separately.

## SECTION 40. EFFECT OF MODERN UNIT

### Analysis 40.1 Result of Highway Minimum Weight Requirements

| BUSINESS GROUPS | TONS REPORTED BY SHIPPERS — ALL SHIPPERS# TOTAL TONNAGE (000) | ALL SHIPPERS# HIGHWAY TONNAGE (000) | ALL SHIPPERS# PER CENT | SHIPPERS USING HIGHWAY ON ACCOUNT MINIMUM WEIGHTS ø TOTAL TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT MINIMUM WEIGHTS ø HIGHWAY TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT MINIMUM WEIGHTS ø PER CENT |
|---|---|---|---|---|---|---|
| ALL GROUPS | 290,203 | 16,275 | 6% | 43,237 | 5,684 | 13% |
| I ROUGH MATERIAL* | 12,350 | 1,683 | 14% | 350 | 163 | 47% |
| 34 Sand, Stone, Gravel | 12,060 | 1,670 | 14 | 349 | 163 | 47 |
| 8b Timber | 290 | 14 | 5 | 1 | 1 | 53 |
| II RAW MATERIAL* | 67,284 | 1,959 | 3% | 1,478 | 155 | 10% |
| 10a Grain | 3,068 | 3 | / | - | - | - |
| 16 Fresh Fruits and Vegetables | 2,436 | 482 | 20 | 197 | 39 | 20 |
| 22 Livestock and Poultry | 832 | 476 | 57 | 18 | 8 | 42 |
| 12 Coal, Coke and Fuel | 45,165 | 539 | 1 | 560 | 20 | 34 |
| 26 Ores and Concentrates | 8,463 | 48 | 1 | - | - | - |
| 8c Lumber | 6,833 | 318 | 5 | 622 | 76 | 12 |
| 03 Barrels, Cooperage Material | 487 | 93 | 19 | 81 | 12 | 14 |
| III SEMIPROCESSED MATERIAL* | 12,748 | 1,314 | 10% | 3,383 | 399 | 12% |
| 13 Cotton, Cotton Linters | 1,259 | 185 | 15 | 390 | 105 | 27 |
| 29 Paper, Paper Products | 11,439 | 1,123 | 10 | 2,979 | 294 | 10 |
| 35 Horticultural Material | 50 | 5 | 10 | 14 | / | 2 |
| IV NECESSARIES* | 50,748 | 3,869 | 8% | 12,205 | 1,988 | 16% |
| 04 Beverages and Liquors | 1,063 | 339 | 32 | 618 | 203 | 33 |
| 36 Sugar, Syrups and Molasses | 9,679 | 648 | 7 | 264 | 56 | 21 |
| 39 Vegetable Oil, Meal and Cake | 1,360 | 213 | 16 | 228 | 53 | 23 |
| 27 Packing House Products | 7,534 | 494 | 7 | 6,867 | 428 | 66 |
| 02 Bakery Goods, Confectionery | 1,486 | 258 | 17 | 1,203 | 213 | 18 |
| 09 Canned Goods | 2,342 | 299 | 13 | 623 | 97 | 16 |
| 18 Groceries | 2,362 | 544 | 23 | 761 | 617 | 81 |
| 10b Cereals, Flour, Mill Products | 18,401 | 406 | 2 | 1,036 | 155 | 15 |
| 17 Furniture and Furnishings | 606 | 66 | 11 | 159 | 42 | 26 |
| 31 Porcelain, China, etc. | 152 | 6 | 4 | - | - | - |
| 21 Leather and Leather Goods | 927 | 77 | 8 | 96 | 29 | 30 |
| 37 Textiles | 4,166 | 433 | 10 | 335 | 30 | 9 |
| 07 Boots and Shoes | 506 | 50 | 10 | 1 | / | 17 |
| 15 Dry Goods, Clothing | 163 | 37 | 23 | 13 | 4 | 33 |
| V AUXILIARIES* | 98,280 | 4,192 | 4% | 14,787 | 1,749 | 12% |
| 8a Masonry Materials (except wood) | 17,765 | 830 | 5 | 2,384 | 593 | 25 |
| 30 Petroleum, crude and refined | 37,422 | 1,249 | 3 | 7,763 | 337 | 14 |
| 28 Paints, Varnishes and Gums | 197 | 36 | 18 | 41 | 11 | 26 |
| 11 Chemicals | 6,807 | 322 | 5 | 1,497 | 134 | 9 |
| 40 Miscellaneous Commodities | 36,098 | 1,755 | 5 | 3,102 | 675 | 22 |
| VI ACCESSORIES* | 48,793 | 3,258 | 7% | 11,033 | 1,090 | 10% |
| 19 Iron and Steel, Structural | 11,363 | 226 | 2 | 484 | 35 | 7 |
| 20 Iron and Steel Articles | 19,935 | 998 | 5 | 4,934 | 154 | 33 |
| 24 Metals, Non-ferrous | 1,921 | 216 | 11 | 356 | 32 | 9 |
| 33 Rubber, rubber articles, tires | 1,584 | 213 | 13 | 608 | 52 | 9 |
| 23 Machinery, Vehicles, etc. | 4,974 | 205 | 4 | 237 | 39 | 16 |
| 32 Plumbing and Heating Supplies | 589 | 21 | 4 | 45 | 8 | 18 |
| 01 Automotive Vehicles and Parts | 6,331 | 1,253 | 20 | 4,040 | 725 | 18 |
| 05 Boats, Marine Equipment | 154 | 1 | 1 | 2 | / | 23 |
| 06 Books and Periodicals | 821 | 55 | 7 | 270 | 37 | 14 |
| 14 Department Store Merchandise | 466 | 37 | 8 | 24 | 5 | 21 |
| 38 Tobacco, Tobacco Products | 710 | 32 | 5 | 31 | 2 | 7 |
| 25 Musical Instruments and Supplies | 5 | / | 3 | - | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# As reported by respondents to Shippers' Inquiry.
ø As reported by respondents to Shippers' Inquiry.
/ Less than 500 tons.
/ Less than 1/2%.



### Analysis 43.1 Factor of Insurance in Classification - Rail Freight Claim Payments - 1932*

| COMMODITY GROUP | AGGREGATE PAYMENTS (000) | AVERAGE UNIT PAYMENTS PER CAR ORIGINATED | PER CAR-MILES THOUSAND | PER TON ORIGINATED | PER TON-MILES THOUSAND | RATIO TO REVENUE | RATIO TO VALUE |
|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | $ 14,626 | $ .81 | $ 1.86 | $.0234 | $ .0662 | .0064 | .000692 |
| I ROUGH MATERIAL | | | | | | | |
| Sand, Stone and Gravel | | Included in Ores in Group II | | | | | |
| II RAW MATERIAL | $ 9,892 | $ .95 | $ 2.30 | $.0226 | $ .0697 | .0080 | .002193 |
| Bulk Grain and Beets | 370 | .38 | 1.40 | .0091 | .0332 | .0032 | .000557 |
| Perishables | 7,324 | 8.63 | 5.93 | .5877 | .4123 | .0323 | .018938 |
| Live Animals | 1,088 | 1.11 | 2.44 | .0980 | .2194 | .0128 | .001047 |
| Coal and Coke | 787 | .14 | .43 | .0027 | .0084 | .0012 | .001362 |
| Ores | 254 | .18 | 1.26 | .0034 | .0273 | .0029 | .000165 |
| Sulphur and Sulphuric Acid | | Included in Ores in Group II | | | | | |
| Forest Products | 150 | .15 | .31 | .0055 | .0122 | .0014 | .000425 |
| III SEMIPROCESSED MATERIAL | $ 123 | $ .18 | $ .41 | $.0106 | $ .0219 | .0016 | .000124 |
| Cotton, Hay and Tobacco | 29 | .07 | .19 | .0057 | .0141 | .0008 | .000047 |
| Paper and Products | 95 | .33 | .62 | .0143 | .0263 | .0023 | .000241 |
| IV NECESSARIES | $ 1,674 | $ .72 | $ 1.28 | $.0322 | $ .0609 | .0053 | .000432 |
| Cereals | 369 | .50 | 1.01 | .0216 | .0430 | .0059 | .000492 |
| Miscellaneous Farm Products | 242 | .54 | 1.28 | .0266 | .0558 | .0044 | .000342 |
| Edible Animal Products | 578 | 1.30 | 1.37 | .0990 | .1040 | .0060 | .000505 |
| Oils - Vegetable and Animal | 53 | .29 | .74 | .0108 | .0276 | .0026 | .000280 |
| Manufactured Food | 405 | .88 | 1.72 | .0318 | .0623 | .0054 | .000501 |
| Textiles and Leather | 27 | .55 | .88 | .0422 | .0675 | .0039 | .000101 |
| V AUXILIARIES | $ 1,480 | $ .40 | $ 1.04 | $.0152 | $ .0415 | .0030 | .000163 |
| Petroleum and Products | 99 | .06 | .15 | .0019 | .0054 | .0004 | .000078 |
| Building Materials | 130 | .28 | 1.13 | .0077 | .0329 | .0027 | .001053 |
| Chemicals | | Included in Miscellaneous in Group V | | | | | |
| Miscellaneous | 1,252 | .90 | 1.90 | .0446 | .0925 | .0065 | .000163 |
| VI ACCESSORIES | $ 1,456 | $ 1.38 | $ 2.86 | $.0523 | $ .1415 | .0092 | .000545 |
| Iron and Steel | 151 | .25 | .76 | .0070 | .0242 | .0019 | .000194 |
| Other Metals | | Included in Iron and Steel in Group VI | | | | | |
| Appliances | 984 | 2.83 | 3.76 | .2336 | .3228 | .0153 | .000538 |
| Glass and Tile | 321 | 2.97 | 6.46 | .1622 | .3259 | .0255 | .004868 |

* Carload only.

SECTION 45. PRESENT CLASSIFICATION

Analysis 45.1 Average Load of All Railway Traffic, in Tons - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | ALL COMMODITIES | 28 | 29 | 28 | 24 | 19 |
| | 10 | Wheat | 44 | 42 | 42 | 44 | 40 |
| | 20 | Corn | 42 | 49 | 39 | 39 | 37 |
| | 30 | Oats | 34 | 37 | 27 | 32 | 27 |
| | 40 | Barley and rye | 38 | 32 | 31 | 40 | 31 |
| | 162 | Flaxseed | 38 | 32 | 23 | 39 | 11 |
| | 163 | Sugar beets | 39 | 36 | 10 | 40 | - |
| 01 | | Bulk Grain and Beets | 42 | 43 | 38 | 42 | 38 |
| | 41 | Rice | 24 | 22 | 21 | 25 | 24 |
| | 42 | Grain, N.O.S. | 27 | 25 | 24 | 30 | 28 |
| | 50 | Flour, wheat | 24 | 26 | 19 | 25 | 22 |
| | 51 | Meal, corn | 22 | 24 | 18 | 24 | 20 |
| | 52 | Flour and meal, edible | 23 | 24 | 15 | 26 | 20 |
| | 60 | Cereal, food preparations | 18 | 17 | 22 | 19 | 19 |
| | 61 | Mill products, N.O.S. | 22 | 22 | 17 | 23 | 21 |
| 02 | | Other Cereals | 23 | 24 | 18 | 24 | 21 |
| | 70 | Hay and alfalfa | 12 | 12 | 12 | 13 | 12 |
| | 71 | Straw | 13 | 13 | 13 | 14 | 14 |
| | 80 | Tobacco, leaf | 11 | 12 | 10 | 15 | 10 |
| | 90 | Cotton in bales | 13 | 15 | 15 | 12 | 15 |
| | 91 | Cotton linters, nolls, etc. | 19 | 19 | 19 | 21 | 23 |
| 03 | | Cotton, Hay and Tobacco | 13 | 13 | 14 | 13 | 11 |
| | 110 | Oranges and grapefruit | 17 | 17 | 17 | 17 | 17 |
| | 111 | Lemons, limes and citrus | 14 | 15 | 15 | 14 | 16 |
| | 120 | Apples, fresh | 16 | 17 | 15 | 16 | 17 |
| | 121 | Bananas | 10 | 10 | 10 | 10 | 10 |
| | 122 | Berries, fresh | 15 | 14 | 12 | 17 | 7 |
| | 123 | Cantaloupes and melons | 11 | 11 | 12 | 11 | 12 |
| | 124 | Grapes, fresh | 14 | 13 | 14 | 14 | 14 |
| | 125 | Peaches, fresh | 12 | 11 | 11 | 13 | 11 |
| | 126 | Watermelons | 13 | 13 | 13 | 12 | 14 |
| | 127 | Fruits, fresh, domestic | 13 | 13 | 13 | 14 | 14 |
| | 128 | Fruits, fresh, tropical | 12 | 13 | 12 | 13 | 12 |
| | 130 | Potatoes, other than sweet | 17 | 18 | 18 | 17 | 15 |
| | 140 | Cabbage | 13 | 12 | 12 | 13 | 12 |
| | 141 | Onions | 13 | 13 | 13 | 13 | 12 |
| | 142 | Tomatoes | 13 | 13 | 13 | 13 | 16 |
| | 143 | Vegetables, fresh, N.O.S. | 11 | 11 | 11 | 11 | 12 |
| 04 | | Perishables | 14 | 14 | 13 | 14 | 14 |
| | 150 | Beans and peas, dried | 27 | 25 | 27 | 29 | 25 |
| | 151 | Fruits, dried or evaporated | 31 | 24 | 33 | 33 | 20 |
| | 152 | Vegetables, dry, N.O.S. | 13 | 13 | 14 | 14 | 14 |
| | 161 | Peanuts | 15 | 15 | 14 | 17 | 14 |
| | 164 | Products of agriculture | 21 | 21 | 21 | 21 | 23 |
| | 282 | Animal products, N.O.S. | 19 | 18 | 17 | 21 | 18 |
| | 640 | Fertilizers, N.O.S. | 28 | 27 | 26 | 35 | 26 |
| 05 | | Miscellaneous Farm Products | 23 | 22 | 22 | 26 | 21 |
| | 170 | Horses, mules, ponies | 12 | 11 | 12 | 11 | 12 |
| | 180 | Cattle and calves, single-deck | 11 | 11 | 11 | 11 | 11 |
| | 181 | Calves, double-deck | 12 | 12 | 12 | 11 | 16 |
| | 190 | Sheep, goats, single-deck | 7 | 8 | 8 | 7 | 7 |
| | 191 | Sheep, goats, double-deck | 10 | 9 | 11 | 10 | 9 |
| | 200 | Hogs, single-deck | 8 | 9 | 8 | 8 | 8 |
| | 201 | Hogs, double-deck | 12 | 12 | 13 | 12 | 12 |
| | 230 | Poultry, live | 9 | 8 | 10 | 9 | 9 |
| | 260 | Wool | 14 | 13 | 14 | 16 | 15 |
| | 270 | Hides, green | 22 | 22 | 23 | 23 | 22 |
| | 281 | Animals, live, N.O.S. | 15 | 14 | 23 | 17 | 17 |
| 06 | | Live Animals | 11 | 12 | 11 | 11 | 12 |
| | 210 | Fresh meats, N.O.S. | 12 | 12 | 13 | 12 | 13 |
| | 220 | Meats, cured, dried, etc. | 15 | 15 | 14 | 17 | 15 |
| | 221 | Butterine and margarine | 11 | 10 | 12 | 14 | 13 |
| | 222 | Packing-house products | 16 | 16 | 16 | 17 | 16 |
| | 231 | Poultry, dressed | 11 | 11 | 12 | 11 | 12 |
| | 240 | Eggs | 12 | 11 | 10 | 13 | 10 |
| | 250 | Butter | 12 | 12 | 12 | 12 | 12 |
| | 251 | Cheese | 14 | 14 | 13 | 15 | 13 |
| 07 | | Animal Products, Edible | 13 | 12 | 13 | 13 | 14 |
| | 290 | Anthracite coal | 48 | 48 | 37 | 30 | 48 |
| | 300 | Bituminous coal | 52 | 53 | 50 | 40 | 58 |
| | 310 | Coke | 31 | 31 | 34 | 31 | 30 |
| 08 | | Coal and Coke | 51 | 51 | 50 | 39 | 56 |
| | 320 | Iron ore | 62 | 65 | 58 | 58 | 68 |
| | 330 | Copper ore, concentrates | 51 | 36 | 45 | 53 | 35 |
| | 331 | Lead ore and concentrates | 48 | 49 | 52 | 47 | 44 |
| | 332 | Zinc ore and concentrates | 49 | 47 | 50 | 51 | 56 |
| | 333 | Ores and concentrates | 48 | 45 | 53 | 49 | 53 |
| | 398 | Products of mines, N.O.S. | 42 | 44 | 36 | 42 | 41 |
| 09 | | Ores | 46 | 47 | 38 | 47 | 45 |
| | 350 | Gravel and sand | 53 | 53 | 50 | 54 | 58 |
| | 351 | Stone, broken, ground, etc. | 55 | 53 | 54 | 58 | 55 |
| | 352 | Stone, rough, N.O.S. | 38 | 38 | 36 | 41 | 37 |
| | 353 | Stone, finished, N.O.S. | 30 | 30 | 28 | 32 | 25 |
| 10 | | Sand, Stone and Gravel | 49 | 46 | 48 | 52 | 51 |
| | 390 | Phosphate rock, crude, etc. | 49 | 40 | 48 | 60 | 50 |
| | 391 | Sulphur (brimstone) | 46 | 39 | 41 | 47 | 50 |
| | 661 | Sulphuric acid | 47 | 44 | 51 | 46 | 53 |
| 11 | | Sulphur and Sulphuric Acid | 47 | 41 | 48 | 48 | 52 |
| | 360 | Petroleum, crude | 34 | 32 | 32 | 34 | 30 |
| | 370 | Asphalt | 33 | 32 | 34 | 35 | 34 |
| | 450 | Petroleum oils, refined | 27 | 27 | 27 | 27 | 27 |
| | 451 | Fuel, road, residual oils | 32 | 30 | 31 | 32 | 30 |
| | 452 | Lubricating oils, etc. | 21 | 21 | 20 | 21 | 19 |
| | 453 | Petroleum products | 23 | 24 | 22 | 22 | 25 |
| 12 | | Petroleum and Products | 27 | 27 | 27 | 28 | 27 |
| | 100 | Logs | 34 | 28 | 29 | 36 | 32 |
| | 101 | Posts, poles, and piling | 26 | 29 | 28 | 25 | 32 |
| | 102 | Wood (fuel) | 28 | 24 | 26 | 29 | 32 |
| | 110 | Ties, railroad | 32 | 32 | 29 | 34 | 32 |
| | 120 | Pulpwood | 32 | 28 | 31 | 35 | 30 |
| | 130 | Lumber, shingles, and lath | 25 | 25 | 25 | 25 | 25 |
| | 131 | Box, crate, and cooperage | 22 | 22 | 21 | 23 | 23 |
| | 132 | Veneer and built-up wood | 24 | 22 | 20 | 25 | 22 |
| | 142 | Crude rubber (unreclaimed) | 36 | 36 | 31 | 32 | 37 |
| | 143 | Products of forests, N.O.S. | 18 | 16 | 21 | 18 | 18 |
| 13 | | Forest Products | 25 | 24 | 25 | 25 | 25 |
| | 100 | Cottonseed | 27 | 30 | 25 | 29 | 19 |
| | 101 | Cottonseed meal and cake | 25 | 26 | 23 | 25 | 22 |
| | 160 | Vegetable - oil cake, etc. | 25 | 26 | 22 | 22 | 37 |
| | 160 | Cottonseed oil | 27 | 27 | 26 | 29 | 28 |
| | 161 | Linseed oil | 25 | 25 | 27 | 26 | 24 |
| | 168 | Vegetable oils, N.O.S. | 29 | 29 | 30 | 30 | 28 |
| | 280 | Fish or sea-animal oil | 29 | 26 | 29 | 30 | 33 |
| 14 | | Oils, Vegetable and Animal | 26 | 27 | 25 | 27 | 27 |
| | 490 | Iron, pig | 52 | 50 | 55 | 53 | 52 |
| | 491 | Iron and steel, 6th class | 44 | 44 | 51 | 47 | 49 |
| | 500 | Nails, fastenings, etc. | 32 | 28 | 34 | 38 | 35 |
| | 510 | Cast-iron pipe, fittings | 23 | 21 | 24 | 26 | 21 |
| | 511 | Iron and steel pipe, fittings | 29 | 26 | 25 | 32 | 22 |
| | 512 | Iron and steel: Nails, wire | 24 | 23 | 23 | 28 | 23 |
| | 513 | Iron and steel, 5th class | 28 | 27 | 25 | 33 | 27 |
| | 583 | Railway car wheels, axles | 25 | 20 | 32 | 26 | 29 |
| | 698 | Furnace slag | 52 | 53 | 51 | 55 | 69 |
| | 693 | Scrap iron and scrap steel | 40 | 39 | 40 | 43 | 40 |
| 15 | | Iron and Steel | 30 | 28 | 31 | 34 | 29 |
| | 520 | Copper: ingot, matte, pig | 45 | 35 | 56 | 48 | 33 |
| | 521 | Copper, brass, and bronze | 27 | 20 | 22 | 47 | 9 |
| | 522 | Lead and zinc: ingot, bar | 45 | 40 | 43 | 47 | 47 |
| | 523 | Aluminum: ingot, pig, slab | 29 | 26 | 39 | 34 | 26 |
| 16 | | All Other Metals | 43 | 35 | 44 | 48 | 39 |
| | 530 | Machinery and boilers | 17 | 16 | 16 | 18 | 15 |
| | 580 | Agricultural implements, etc. | 15 | 15 | 17 | 15 | 16 |
| | 581 | Vehicles, horse-drawn, etc. | 12 | 11 | 14 | 13 | 18 |
| | 582 | Tractors and parts | 16 | 14 | 15 | 17 | 14 |
| | 590 | Automobiles (passenger) | 6 | 5 | 5 | 6 | 6 |
| | 591 | Autotrucks | 8 | 8 | 8 | 8 | 6 |
| | 592 | Automobiles, K.D. and parts | 17 | 16 | 19 | 19 | 14 |
| | 593 | Automobile tires | 14 | 11 | 15 | 15 | 12 |
| | 610 | Furniture, metal | 11 | 10 | 11 | 12 | 9 |
| | 611 | Furniture, not metal | 7 | 7 | 7 | 8 | 7 |
| 17 | 697 | Building woodwork | 20 | 18 | 19 | 22 | 18 |
| | | Appliances | 11 | 11 | 11 | 12 | 9 |
| | 540 | Cement, building | 38 | 37 | 37 | 39 | 34 |
| | 550 | Brick, common | 32 | 37 | 34 | 35 | 36 |
| | 551 | Brick and building tile | 35 | 35 | 29 | 34 | 36 |
| | 552 | Artificial stone, N.O.S. | 24 | 22 | 30 | 27 | 32 |
| | 560 | Lime, common, quick, slaked | 23 | 23 | 24 | 23 | 22 |
| | 561 | Plaster, stucco, etc. | 26 | 25 | 29 | 26 | 23 |
| 18 | | Building Materials | 34 | 33 | 34 | 35 | 31 |
| | 580 | Salt | 27 | 28 | 26 | 26 | 26 |
| | 470 | Sugar (beet or cane) | 30 | 27 | 25 | 35 | 27 |
| | 471 | Table sirups and molasses | 30 | 31 | 28 | 30 | 24 |
| | 472 | Molasses, blackstrap, etc. | 45 | 41 | 45 | 46 | 41 |
| | 680 | Beverages | 19 | 18 | 20 | 20 | 17 |
| | 630 | Ice | 27 | 29 | 22 | 25 | 34 |
| | 680 | Canned food products | 24 | 22 | 21 | 28 | 20 |
| 19 | | Manufactured Food | 27 | 25 | 25 | 30 | 24 |
| | 650 | Newsprint paper | 26 | 25 | 25 | 27 | 25 |
| | 651 | Printing paper, N.O.S. | 24 | 24 | 22 | 24 | 25 |
| | 694 | Paper bags, wrapping paper | 22 | 21 | 21 | 23 | 23 |
| | 695 | Paperboard and wallboard | 21 | 20 | 21 | 23 | 20 |
| | 696 | Building paper and roofing | 22 | 22 | 21 | 23 | 23 |
| 20 | | Paper and Products | 23 | 23 | 22 | 25 | 22 |
| | 640 | Rosin | 25 | 25 | 21 | 27 | 25 |
| | 641 | Turpentine | 24 | 22 | 24 | 26 | 27 |
| | 660 | Alcohol, denatured or wood | 21 | 20 | 22 | 23 | 22 |
| | 662 | Explosives, N.O.S. | 15 | 14 | 16 | 16 | 13 |
| | 691 | Paints, oils and varnishes | 22 | 19 | 23 | 27 | 24 |
| 21 | | Chemicals | 21 | 19 | 22 | 23 | 21 |
| | 271 | Leather | 17 | 17 | 17 | 18 | 15 |
| | 670 | Cotton cloth and fabrics | 10 | 10 | 9 | 14 | 11 |
| | 671 | Bagging and bags | 18 | 16 | 17 | 19 | 17 |
| 22 | | Textiles and Leather | 13 | 14 | 10 | 17 | 13 |
| | 570 | Sewer pipe and draintile | 18 | 19 | 17 | 16 | 16 |
| | 699 | Glass, flat, not plate | 20 | 24 | 17 | 21 | 17 |
| | 700 | Glass: Bottles, jars, etc. | 18 | 19 | 17 | 17 | 17 |
| 23 | | Glass and Tile | 19 | 19 | 17 | 19 | 17 |
| | 690 | Tobacco, manufactured | 18 | 18 | 18 | 19 | 17 |
| | 698 | Soap and washing compounds | 20 | 20 | 20 | 21 | 19 |
| | 701 | Manufactures, miscellaneous | 20 | 20 | 20 | 20 | 21 |
| 24 | | Miscellaneous | 20 | 20 | 20 | 20 | 21 |



SECTION 45. PRESENT CLASSIFICATION

Analysis 45.2 Average Haul of All Railway Traffic, in Miles - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | ALL COMMODITIES | 199 | 162 | 197 | 242 | 284 |
| | 10 | Wheat | 319 | 183 | 242 | 263 | 333 |
| | 20 | Corn | 291 | 207 | 156 | 232 | 223 |
| | 30 | Oats | 309 | 251 | 208 | 171 | 281 |
| | 40 | Barley and rye | 276 | 216 | 233 | 209 | 355 |
| | 162 | Flaxseed | 304 | 109 | 312 | 295 | 257 |
| | 163 | Sugar beets | 46 | 35 | 281 | 42 | - |
| 01 | | Bulk Grain and Beets | 275 | 201 | 200 | 214 | 297 |
| | 41 | Rice | 320 | 265 | 280 | 190 | 243 |
| | 42 | Grain, N.O.S. | 505 | 254 | 339 | 343 | 433 |
| | 50 | Flour, wheat | 568 | 285 | 216 | 296 | 321 |
| | 51 | Meal, corn | 455 | 296 | 249 | 283 | 214 |
| | 52 | Flour and meal, edible | 567 | 245 | 262 | 313 | 416 |
| | 60 | Cereal food preparations | 627 | 239 | 357 | 407 | 346 |
| | 61 | Mill products, N.O.S. | 407 | 220 | 259 | 238 | 293 |
| 02 | | Other Cereals | 502 | 256 | 252 | 276 | 312 |
| | 70 | Hay and alfalfa | 374 | 209 | 246 | 193 | 294 |
| | 71 | Straw | 209 | 123 | 210 | 156 | 182 |
| | 80 | Tobacco, leaf | 366 | 241 | 190 | 185 | 254 |
| | 90 | Cotton in bales | 410 | 223 | 232 | 225 | 275 |
| | 91 | Cotton linters, nolls, etc. | 692 | 286 | 287 | 284 | 250 |
| 03 | | Cotton, Hay and Tobacco | 402 | 216 | 227 | 215 | 262 |
| | 110 | Oranges and grapefruit | 2,125 | 566 | 466 | 851 | 139 |
| | 111 | Lemons, limes and citrus | 2,386 | 568 | 334 | 755 | 291 |
| | 120 | Apples, fresh | 1,162 | 294 | 324 | 705 | 190 |
| | 121 | Bananas | 694 | 243 | 557 | 319 | 281 |
| | 122 | Berries, fresh | 1,199 | 342 | 420 | 628 | 115 |
| | 123 | Cantaloupes and melons | 2,433 | 530 | 402 | 658 | 203 |
| | 124 | Grapes, fresh | 2,597 | 481 | 423 | 840 | 388 |
| | 125 | Peaches, fresh | 842 | 364 | 274 | 414 | 149 |
| | 126 | Watermelons | 1,084 | 348 | 319 | 358 | 444 |
| | 127 | Fruits, fresh, domestic | 1,794 | 491 | 417 | 697 | 256 |
| | 128 | Fruits, fresh, tropical | 1,519 | 293 | 380 | 543 | 290 |
| | 130 | Potatoes, other than sweet | 774 | 177 | 293 | 465 | 253 |
| | 140 | Cabbage | 969 | 298 | 459 | 460 | 129 |
| | 141 | Onions | 1,012 | 337 | 369 | 461 | 335 |
| | 142 | Tomatoes | 1,054 | 458 | 579 | 539 | 157 |
| | 143 | Vegetables, fresh, N.O.S. | 2,063 | 466 | 442 | 661 | 167 |
| 04 | | Perishables | 1,425 | 319 | 418 | 661 | 171 |
| | 150 | Beans and peas, dried | 888 | 233 | 377 | 620 | 385 |
| | 151 | Fruits, dried or evaporated | 833 | 331 | 382 | 472 | 527 |
| | 152 | Vegetables, dry, N.O.S. | 688 | 289 | 318 | 396 | 336 |
| | 161 | Peanuts | 715 | 221 | 281 | 345 | 402 |
| | 164 | Products of agriculture | 426 | 260 | 250 | 249 | 543 |
| | 282 | Animal products, N.O.S. | 457 | 220 | 310 | 345 | 227 |
| | 640 | Fertilizers, N.O.S. | 295 | 157 | 161 | 252 | 183 |
| 05 | | Miscellaneous Farm Products | 420 | 209 | 192 | 329 | 290 |
| | 170 | Horses, mules, ponies | 594 | 323 | 243 | 371 | 163 |
| | 180 | Cattle and calves, single-deck | 404 | 335 | 186 | 284 | 244 |
| | 181 | Calves, double-deck | 594 | 419 | 203 | 271 | 89 |
| | 190 | Sheep, goats, single-deck | 453 | 252 | 137 | 317 | 320 |
| | 191 | Sheep, goats, double-deck | 639 | 350 | 147 | 410 | 252 |
| | 200 | Hogs, single-deck | 243 | 95 | 179 | 200 | 167 |
| | 201 | Hogs, double-deck | 511 | 124 | 231 | 323 | 129 |
| | 230 | Poultry, live | 1,207 | 570 | 281 | 385 | 332 |
| | 260 | Wool | 851 | 218 | 291 | 595 | 459 |
| | 270 | Hides, green | 620 | 268 | 331 | 335 | 306 |
| | 281 | Animals, live, N.O.S. | 339 | 146 | 362 | 162 | 99 |
| 06 | | Live Animals | 465 | 348 | 214 | 303 | 259 |
| | 210 | Fresh meats, N.O.S. | 917 | 141 | 351 | 369 | 373 |
| | 220 | Meats, cured, dried, etc. | 1,010 | 438 | 343 | 499 | 445 |
| | 221 | Butterine and margarine | 760 | 339 | 423 | 486 | 305 |
| | 222 | Packing-house products | 796 | 383 | 318 | 362 | 443 |
| | 231 | Poultry, dressed | 1,232 | 447 | 266 | 410 | 376 |
| | 240 | Eggs | 1,353 | 434 | 282 | 546 | 471 |
| | 250 | Butter | 927 | 398 | 282 | 367 | 480 |
| | 251 | Cheese | 818 | 323 | 281 | 268 | 461 |
| 07 | | Animal Products, Edible | 952 | 422 | 332 | 396 | 415 |
| | 290 | Anthracite coal | 174 | 116 | 169 | 171 | 90 |
| | 300 | Bituminous coal | 361 | 151 | 193 | 169 | 300 |
| | 310 | Coke | 182 | 98 | 221 | 138 | 202 |
| 08 | | Coal and Coke | 318 | 140 | 195 | 168 | 299 |
| | 320 | Iron ore | 133 | 88 | 26 | 82 | 133 |
| | 330 | Copper ore concentrates | 29 | 158 | 48 | 22 | 614 |
| | 331 | Lead ore and concentrates | 52 | 35 | 169 | 35 | 403 |
| | 332 | Zinc ore and concentrates | 351 | 84 | 205 | 287 | 386 |
| | 333 | Ores and concentrates | 478 | 234 | 275 | 270 | 304 |
| | 398 | Products of mines, N.O.S. | 225 | 120 | 206 | 167 | 130 |
| 09 | | Ores | 194 | 113 | 188 | 117 | 143 |
| | 350 | Gravel and sand | 69 | 63 | 59 | 50 | 76 |
| | 351 | Stone, broken, ground, etc. | 66 | 61 | 70 | 73 | 67 |
| | 352 | Stone, rough, N.O.S. | 136 | 76 | 141 | 135 | 127 |
| | 353 | Stone, finished, N.O.S. | 280 | 231 | 196 | 195 | 280 |
| 10 | | Sand, Stone and Gravel | 83 | 70 | 69 | 99 | 79 |
| | 390 | Phosphate rock, crude, etc. | 111 | 102 | 95 | 274 | 274 |
| | 391 | Sulphur (brimstone) | 245 | 212 | 210 | 159 | 242 |
| | 661 | Sulphuric acid | 161 | 73 | 202 | 96 | 118 |
| 11 | | Sulphur and Sulphuric Acid | 157 | 107 | 109 | 150 | 155 |
| | 360 | Petroleum, crude | 403 | 149 | 189 | 275 | 102 |
| | 370 | Asphalt (natural, by-products) | 295 | 133 | 253 | 213 | 170 |
| | 450 | Petroleum oils, refined | 350 | 122 | 167 | 846 | 141 |
| | 451 | Fuel, road, and residual oils | 283 | 81 | 139 | 105 | 141 |
| | 452 | Lubricating oils, etc. | 487 | 188 | 457 | 309 | 227 |
| | 453 | Petroleum products | 418 | 192 | 241 | 306 | 174 |
| 12 | | Petroleum and Products | 347 | 125 | 173 | 249 | 149 |
| | 100 | Logs | 57 | 95 | 70 | 45 | 161 |
| | 101 | Posts, poles, and piling | 534 | 172 | 250 | 300 | 223 |
| | 102 | Wood (fuel) | 89 | 84 | 68 | 82 | 77 |
| | 110 | Ties, railroad | 313 | 177 | 147 | 206 | 141 |
| | 120 | Pulpwood | 348 | 103 | 84 | 121 | 110 |
| | 130 | Lumber, shingles, and lath | 246 | 212 | 254 | 252 | 202 |
| | 131 | Box, crate, and cooperage | 695 | 234 | 256 | 376 | 234 |
| | 132 | Veneer and built-up wood | 1,225 | 351 | 276 | 801 | 323 |
| | 142 | Crude rubber (unreclaimed) | 958 | 265 | 173 | 339 | 616 |
| | 143 | Products of forests, N.O.S. | 322 | 197 | 139 | 250 | 168 |
| 13 | | Forest Products | 152 | 198 | 213 | 296 | 186 |
| | 100 | Cottonseed | 101 | 118 | 74 | 100 | 367 |
| | 101 | Cottonseed meal and cake | 162 | 334 | 201 | 231 | 348 |
| | 160 | Vegetable - oil cake, etc. | 398 | 240 | 332 | 229 | 518 |
| | 160 | Cottonseed oil | 520 | 205 | 265 | 290 | 143 |
| | 161 | Linseed oil | 511 | 180 | 141 | 127 | 249 |
| | 168 | Vegetable oils, N.O.S. | 1,075 | 309 | 141 | 696 | 244 |
| | 280 | Fish or sea-animal oil | 966 | 251 | 178 | 740 | 148 |
| 14 | | Oils - Vegetable and Animal | 391 | 270 | 185 | 256 | 286 |
| | 490 | Iron, pig | 202 | 107 | 179 | 187 | 165 |
| | 491 | Iron and steel, 6th class | 98 | 82 | 45 | 54 | 217 |
| | 500 | Nails, fastenings, etc. | 335 | 152 | 192 | 181 | 159 |
| | 510 | Cast-iron pipe and fittings | 595 | 179 | 265 | 347 | 242 |
| | 511 | Iron and steel pipe, fittings | 521 | 221 | 265 | 254 | 226 |
| | 512 | Iron and steel: Nails, wire | 422 | 189 | 225 | 273 | 226 |
| | 513 | Iron and steel, 5th class | 306 | 161 | 216 | 228 | 242 |
| | 583 | Railway car wheels, axles | 281 | 157 | 184 | 184 | 153 |
| | 698 | Furnace slag | 85 | 44 | 144 | 51 | 51 |
| | 693 | Scrap iron and scrap steel | 140 | 92 | 135 | 108 | 140 |
| 15 | | Iron and Steel | 260 | 139 | 192 | 205 | 191 |
| | 520 | Copper: ingot, matte, pig | 1,181 | 175 | 536 | 536 | 474 |
| | 521 | Copper, brass and bronze | 372 | 184 | 201 | 298 | 225 |
| | 522 | Lead and zinc: ingot, bar | 952 | 271 | 286 | 526 | 415 |
| | 523 | Aluminum: ingot, pig, slab | 809 | 257 | 266 | 209 | 303 |
| 16 | | All Other Metals | 919 | 236 | 307 | 505 | 394 |
| | 530 | Machinery and boilers | 587 | 233 | 258 | 382 | 236 |
| | 580 | Agricultural implements, etc. | 589 | 280 | 271 | 339 | 370 |
| | 581 | Vehicles, horse-drawn, etc. | 706 | 444 | 250 | 298 | 291 |
| | 582 | Tractors and parts | 673 | 251 | 271 | 406 | 380 |
| | 590 | Automobiles (passenger) | 822 | 269 | 248 | 494 | 400 |
| | 591 | Autotrucks | 906 | 344 | 243 | 588 | 346 |
| | 592 | Automobiles, K.D. and parts | 665 | 218 | 296 | 566 | 340 |
| | 593 | Automobile tires | 912 | 274 | 297 | 576 | 526 |
| | 610 | Furniture, metal | 649 | 264 | 313 | 342 | 299 |
| | 611 | Furniture, not metal | 803 | 344 | 289 | 488 | 332 |
| 17 | 697 | Building woodwork | 1,450 | 367 | 293 | 648 | 318 |
| | | Appliances | 723 | 344 | 277 | 480 | 321 |
| | 540 | Cement, building | 195 | 87 | 147 | 226 | 123 |
| | 550 | Brick, common | 186 | 124 | 101 | 128 | 77 |
| | 551 | Brick and building tile | 317 | 180 | 176 | 182 | 166 |
| | 552 | Artificial stone, N.O.S. | 347 | 182 | 175 | 206 | 196 |
| | 560 | Lime, common, quick, slaked | 354 | 206 | 178 | 464 | 164 |
| | 561 | Plaster, stucco, etc. | 468 | 172 | 234 | 320 | 189 |
| 18 | | Building Material | 234 | 118 | 149 | 143 | 137 |
| | 580 | Salt | 483 | 203 | 266 | 259 | 223 |
| | 470 | Sugar (beet or cane) | 566 | 258 | 201 | 391 | 459 |
| | 471 | Table sirups and molasses | 716 | 327 | 383 | 563 | 500 |
| | 472 | Molasses, blackstrap, etc. | 346 | 171 | 190 | 189 | 464 |
| | 680 | Beverages | 433 | 344 | 276 | 271 | 370 |
| | 630 | Ice | 50 | 47 | 44 | 44 | 35 |
| | 680 | Canned food products | 679 | 279 | 273 | 395 | 398 |
| 19 | | Manufactured Food | 510 | 234 | 246 | 316 | 362 |
| | 650 | Newsprint paper | 707 | 175 | 259 | 358 | 217 |
| | 651 | Printing paper, N.O.S. | 518 | 216 | 259 | 322 | 323 |
| | 694 | Paper bags, wrapping paper | 592 | 198 | 258 | 335 | 259 |
| | 695 | Paperboard, wallboard | 488 | 178 | 288 | 267 | 207 |
| | 696 | Building paper and roofing | 420 | 168 | 243 | 268 | 246 |
| 20 | | Paper and Products | 546 | 187 | 267 | 319 | 247 |
| | 640 | Rosin | 539 | 172 | 249 | 282 | 228 |
| | 641 | Turpentine | 1,037 | 183 | 398 | 562 | 442 |
| | 660 | Alcohol, denatured or wood | 526 | 201 | 272 | 363 | 303 |
| | 662 | Explosives, N.O.S. | 482 | 156 | 215 | 287 | 254 |
| | 691 | Paints in oil and varnishes | 639 | 236 | 261 | 445 | 273 |
| 21 | | Chemicals | 575 | 197 | 269 | 360 | 247 |
| | 271 | Leather | 617 | 284 | 390 | 458 | 299 |
| | 670 | Cotton cloth and fabrics | 650 | 162 | 275 | 374 | 312 |
| | 671 | Bagging, and bags | 592 | 265 | 275 | 326 | 348 |
| 22 | | Textiles and Leather | 624 | 205 | 280 | 324 | 336 |
| | 570 | Sewer pipe and draintile | 341 | 212 | 157 | 138 | 171 |
| | 699 | Glass, flat, not plate | 620 | 252 | 218 | 361 | 360 |
| | 700 | Glass: Bottles, jars, etc. | 560 | 248 | 240 | 306 | 261 |
| 23 | | Glass and Tile | 497 | 238 | 200 | 252 | 271 |
| | 690 | Tobacco, manufactured | 1,299 | 250 | 306 | 790 | 428 |
| | 698 | Soap and washing compounds | 495 | 209 | 282 | 371 | 373 |
| | 701 | Manufactures, miscellaneous | 474 | 222 | 241 | 301 | 295 |
| 24 | | Miscellaneous | 479 | 221 | 245 | 307 | 261 |

SECTION 45. PRESENT CLASSIFICATION

Analysis 45.3 Average Revenue of All Railway Traffic, per Ton Mile - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | | $ | $ | $ | $ | $ |
| | | ALL COMMODITIES | .0104 | .0106 | .0106 | .0113 | .0061 |
| | 10 | Wheat | .0104 | .0097 | .0100 | .0106 | .0078 |
| | 20 | Corn | .0105 | .0095 | .0147 | .0106 | .0087 |
| | 30 | Oats | .0092 | .0076 | .0108 | .0113 | .0073 |
| | 40 | Barley and rye | .0105 | .0103 | .0106 | .0106 | .0071 |
| | 162 | Flaxseed | .0121 | .0139 | .0085 | .0121 | .0126 |
| | 163 | Sugar beets | .0136 | .0191 | .0149 | .0132 | - |
| 01 | | Bulk Grain and Seeds | .0104 | .0092 | .0117 | .0108 | .0079 |
| | 41 | Rice | .0130 | .0110 | .0100 | .0140 | .0113 |
| | 42 | Grain, N.O.S. | .0094 | .0087 | .0080 | .0105 | .0085 |
| | 50 | Flour, wheat | .0068 | .0072 | .0107 | .0098 | .0079 |
| | 51 | Meal, corn | .0061 | .0061 | .0067 | .0051 | .0106 |
| | 52 | Flour and meal | .0073 | .0071 | .0102 | .0064 | .0057 |
| | 60 | Cereal food preparations | .0095 | .0107 | .0088 | .0083 | .0078 |
| | 61 | Mill products, N.O.S. | .0070 | .0077 | .0090 | .0059 | .0074 |
| 02 | | Other Cereals | .0072 | .0076 | .0099 | .0062 | .0077 |
| | 70 | Hay and alfalfa | .0138 | .0142 | .0117 | .0141 | .0115 |
| | 71 | Straw | .0174 | .0181 | .0115 | .0169 | .0152 |
| | 80 | Tobacco, leaf | .0220 | .0182 | .0249 | .0218 | .0178 |
| | 90 | Cotton in bales | .0180 | .0109 | .0148 | .0207 | .0089 |
| | 91 | Cotton linters, nolls | .0106 | .0081 | .0117 | .0121 | .0090 |
| 03 | | Cotton, Hay and Tobacco | .0167 | .0138 | .0164 | .0187 | .0147 |
| | 110 | Oranges and grapefruit | .0125 | .0106 | .0168 | .0118 | .0149 |
| | 111 | Lemons, limes, and citrus | .0109 | .0094 | .0099 | .0112 | .0202 |
| | 120 | Apples, fresh | .0126 | .0126 | .0118 | .0125 | .0173 |
| | 121 | Bananas | .0216 | .0268 | .0183 | .0216 | .0277 |
| | 122 | Berries, fresh | .0207 | .0182 | .0366 | .0155 | .0428 |
| | 123 | Cantaloupes and melons | .0118 | .0106 | .0119 | .0324 | .0198 |
| | 124 | Grapes, fresh | .0115 | .0112 | .0099 | .0116 | .0248 |
| | 125 | Peaches, fresh | .0181 | .0155 | .0202 | .0188 | .0191 |
| | 126 | Watermelons | .0114 | .0077 | .0119 | .0150 | .0130 |
| | 127 | Fruits, fresh, domestic | .0126 | .0112 | .0109 | .0131 | .0166 |
| | 128 | Fruits, fresh, tropical | .0121 | .0151 | .0107 | .0128 | .0133 |
| | 130 | Potatoes, other than sweet | .0123 | .0154 | .0137 | .0104 | .0107 |
| | 140 | Cabbage | .0138 | .0139 | .0171 | .0121 | .0164 |
| | 141 | Onions | .0116 | .0125 | .0129 | .0108 | .0127 |
| | 142 | Tomatoes | .0133 | .0128 | .0163 | .0121 | .0195 |
| | 143 | Vegetables, fresh, N.O.S. | .0128 | .0121 | .0193 | .0120 | .0167 |
| 04 | | Perishables | .0127 | .0126 | .0162 | .0120 | .0147 |
| | 150 | Beans and peas, dried | .0107 | .0121 | .0134 | .0099 | .0109 |
| | 151 | Fruits, dried or evaporated | .0111 | .0125 | .0094 | .0110 | .0087 |
| | 152 | Vegetables, dry, N.O.S. | .0143 | .0141 | .0180 | .0128 | .0120 |
| | 161 | Peanuts | .0150 | .0154 | .0166 | .0142 | .0119 |
| | 164 | Products of agriculture | .0117 | .0111 | .0116 | .0125 | .0073 |
| | 282 | Animal products, N.O.S. | .0167 | .0182 | .0158 | .0152 | .0132 |
| | 240 | Fertilizers, N.O.S. | .0111 | .0121 | .0126 | .0079 | .0093 |
| 05 | | Miscellaneous Farm Products | .0121 | .0129 | .0131 | .0112 | .0093 |
| | 170 | Horses, mules, ponies | .0198 | .0238 | .0221 | .0175 | .0392 |
| | 180 | Cattle and calves,single-deck | .0141 | .0142 | .0222 | .0171 | .0167 |
| | 181 | Calves, double-deck | .0139 | .0125 | .0179 | .0181 | .0528 |
| | 190 | Sheep and goats,single-deck | .0169 | .0162 | .0264 | .0169 | .0148 |
| | 191 | Sheep and goats,double-deck | .0140 | .0127 | .0204 | .0144 | .0186 |
| | 200 | Hogs, single-deck | .0230 | .0166 | .0237 | .0232 | .0218 |
| | 201 | Hogs, double-deck | .0148 | .0121 | .0210 | .0163 | .0190 |
| | 230 | Poultry, live | .0225 | .0201 | .0299 | .0282 | .0241 |
| | 260 | Wool | .0209 | .0205 | .0189 | .0218 | .0150 |
| | 270 | Hides, green | .0140 | .0139 | .0143 | .0142 | .0136 |
| | 281 | Animals, live, N.O.S. | .0228 | .0234 | .0123 | .0278 | .0106 |
| 06 | | Live Animals | .0164 | .0141 | .0231 | .0174 | .0206 |
| | 210 | Fresh meats, N.O.S. | .0164 | .0162 | .0185 | .0163 | .0181 |
| | 220 | Meats, cured, dried | .0143 | .0119 | .0165 | .0167 | .0135 |
| | 221 | Butterine and margarine | .0238 | .0235 | .0271 | .0222 | .0182 |
| | 222 | Packing-house products | .0152 | .0134 | .0161 | .0173 | .0193 |
| | 231 | Poultry, dressed | .0209 | .0200 | .0271 | .0223 | .0272 |
| | 240 | Eggs | .0184 | .0186 | .0279 | .0174 | .0219 |
| | 250 | Butter | .0217 | .0208 | .0272 | .0227 | .0221 |
| | 251 | Cheese | .0201 | .0175 | .0238 | .0239 | .0165 |
| 07 | | Animal Products, Edible | .0172 | .0165 | .0186 | .0180 | .0161 |
| | 290 | Anthracite coal | .0112 | .0112 | .0074 | .0109 | .0112 |
| | 300 | Bituminous coal | .0065 | .0068 | .0063 | .0080 | .0053 |
| | 310 | Coke | .0113 | .0132 | .0077 | .0102 | .0089 |
| 08 | | Coal and Coke | .0071 | .0079 | .0063 | .0081 | .0054 |
| | 320 | Iron ore | .0082 | .0078 | .0178 | .0094 | .0051 |
| | 330 | Copper ore concentrates | .0093 | .0066 | .0150 | .0093 | .0042 |
| | 331 | Lead ore and concentrates | .0138 | .0110 | .0099 | .0126 | .0068 |
| | 332 | Zinc ore and concentrates | .0065 | .0072 | .0073 | .0060 | .0051 |
| | 333 | Ores and concentrates | .0066 | .0068 | .0099 | .0068 | .0046 |
| | 392 | Products of mines, N.O.S. | .0082 | .0089 | .0067 | .0077 | .0086 |
| 09 | | Ores | .0080 | .0084 | .0068 | .0080 | .0076 |
| | 350 | Gravel, sand, etc. | .0117 | .0115 | .0112 | .0122 | .0103 |
| | 351 | Stone, broken, ground,etc. | .0103 | .0123 | .0101 | .0088 | .0107 |
| | 352 | Stone, rough, N.O.S. | .0099 | .0110 | .0069 | .0100 | .0083 |
| | 353 | Stone, finished, N.O.S. | .0097 | .0096 | .0089 | .0111 | .0078 |
| 10 | | Sand, Stone and Gravel | .0110 | .0115 | .0103 | .0109 | .0101 |
| | 390 | Phosphate rock, crude, etc. | .0088 | .0120 | .0090 | .0058 | .0094 |
| | 391 | Sulphur (brimstone) | .0079 | .0103 | .0082 | .0074 | .0115 |
| | 661 | Sulphuric acid | .0156 | .0245 | .0097 | .0169 | .0192 |
| 11 | | Sulphur and Sulphuric Acid | .0100 | .0171 | .0091 | .0086 | .0127 |
| | 360 | Petroleum, crude | .0080 | .0118 | .0106 | .0075 | .0135 |
| | 370 | Asphalt (natural) etc. | .0125 | .0141 | .0105 | .0112 | .0118 |
| | 450 | Petroleum oils, refined,etc. | .0150 | .0189 | .0194 | .0129 | .0195 |
| | 451 | Fuel, road, residual oils | .0122 | .0212 | .0160 | .0098 | .0149 |
| | 452 | Lubricating oils and grease | .0127 | .0142 | .0129 | .0114 | .0131 |
| | 453 | Petroleum products, N.O.S. | .0125 | .0137 | .0100 | .0110 | .0142 |
| 12 | | Petroleum and Products | .0139 | .0180 | .0180 | .0119 | .0176 |
| | 400 | Logs | .0105 | .0127 | .0109 | .0103 | .0087 |
| | 401 | Posts, poles, and piling | .0095 | .0107 | .0094 | .0092 | .0084 |
| | 402 | Wood (fuel) | .0110 | .0167 | .0108 | .0104 | .0125 |
| | 410 | Ties, railroad | .0105 | .0186 | .0119 | .0109 | .0153 |
| | 420 | Pulpwood | .0089 | .0117 | .0074 | .0077 | .0088 |
| | 430 | Lumber, shingles and lath | .0079 | .0091 | .0082 | .0073 | .0091 |
| | 431 | Box, crate, and cooperage | .0102 | .0089 | .0127 | .0097 | .0078 |
| | 432 | Veneer and built-up wood | .0074 | .0087 | .0100 | .0066 | .0093 |
| | 442 | Crude rubber(unreclaimed) | .0134 | .0133 | .0168 | .0138 | .0084 |
| | 443 | Products of forests, N.O.S. | .0118 | .0125 | .0109 | .0111 | .0112 |
| | | Forest Products | .0086 | .0099 | .0090 | .0079 | .0091 |
| | 100 | Cottonseed | .0212 | .0127 | .0236 | .0199 | .0199 |
| | 101 | Cottonseed meal and cake | .0091 | .0082 | .0097 | .0103 | .0068 |
| | 160 | Vegetable - oil cake, etc. | .0085 | .0092 | .0063 | .0088 | .0063 |
| | 450 | Cottonseed oil | .0124 | .0084 | .0128 | .0142 | .0083 |
| | 451 | Linseed oil | .0127 | .0166 | .0101 | .0099 | .0118 |
| | 452 | Vegetable oils, N.O.S. | .0066 | .0090 | .0057 | .0097 | .0079 |
| | 280 | Fish or sea-animal oil | .0079 | .0098 | .0141 | .0092 | .0088 |
| 14 | | Oils - Vegetable and Animal | .0106 | .0084 | .0126 | .0108 | .0081 |
| | 490 | Iron, pig | .0095 | .0118 | .0071 | .0070 | .0081 |
| | 491 | Iron and steel, 6th Class | .0147 | .0156 | .0130 | .0114 | .0122 |
| | 500 | Nails, fastenings, etc. | .0111 | .0132 | .0103 | .0085 | .0152 |
| | 510 | Cast-iron pipe and fittings | .0120 | .0139 | .0105 | .0111 | .0107 |
| | 511 | Iron and steel pipe,fittings | .0148 | .0135 | .0123 | .0166 | .0128 |
| | 512 | Iron and steel: Nails, wire | .0146 | .0143 | .0143 | .0154 | .0117 |
| | 513 | Iron and steel, 5th Class | .0146 | .0152 | .0141 | .0128 | .0130 |
| | 585 | Railway car wheels, axles | .0165 | .0166 | .0162 | .0159 | .0159 |
| | 698 | Furnace slag | .0104 | .0118 | .0057 | .0121 | .0114 |
| | 695 | Scrap iron and scrap steel | .0139 | .0116 | .0099 | .0123 | .0130 |
| 15 | | Iron and Steel | .0139 | .0147 | .0101 | .0134 | .0127 |
| | 520 | Copper: Ingot, matte, pig | .0071 | .0110 | .0065 | .0062 | .0080 |
| | 521 | Copper, brass, and bronze | .0141 | .0172 | .0197 | .0128 | .0176 |
| | 522 | Lead and zinc: Ingot, bar | .0061 | .0070 | .0062 | .0057 | .0051 |
| | 523 | Aluminum: Ingot, pig, slab | .0159 | .0161 | .0139 | .0179 | .0090 |
| 16 | | All Other Metals | .0070 | .0090 | .0076 | .0061 | .0060 |
| | 530 | Machinery and boilers | .0176 | .0149 | .0200 | .0174 | .0143 |
| | 580 | Agricultural implements,etc. | .0178 | .0143 | .0176 | .0208 | .0120 |
| | 581 | Vehicles, horse-drawn, etc. | .0176 | .0122 | .0236 | .0240 | .0121 |
| | 582 | Tractors and parts | .0176 | .0151 | .0221 | .0176 | .0105 |
| | 590 | Automobiles (passenger) | .0374 | .0346 | .0488 | .0395 | .0328 |
| | 591 | Autotrucks | .0280 | .0282 | .0418 | .0319 | .0279 |
| | 592 | Automobiles, K.D. and parts | .0165 | .0166 | .0169 | .0163 | .0151 |
| | 593 | Automobile tires | .0181 | .0174 | .0239 | .0188 | .0161 |
| | 610 | Furniture, metal | .0201 | .0209 | .0203 | .0191 | .0173 |
| | 611 | Furniture, not metal | .0200 | .0238 | .0241 | .0233 | .0258 |
| | 697 | Building woodwork (millwork) | .0075 | .0086 | .0011 | .0068 | .0118 |
| 17 | | Appliances | .0210 | .0201 | .0212 | .0215 | .0216 |
| | 540 | Cement, building | .0140 | .0155 | .0103 | .0110 | .0119 |
| | 550 | Brick, common | .0109 | .0108 | .0106 | .0100 | .0139 |
| | 551 | Brick, and building tile | .0093 | .0095 | .0086 | .0093 | .0087 |
| | 552 | Artificial stone, N.O.S. | .0113 | .0111 | .0112 | .0115 | .0120 |
| | 560 | Lime, common (quick slaked) | .0097 | .0090 | .0087 | .0117 | .0100 |
| | 561 | Plaster (stucco or wall) etc. | .0094 | .0115 | .0089 | .0079 | .0112 |
| 18 | | Building Material | .0122 | .0126 | .0099 | .0126 | .0107 |
| | 580 | Salt | .0096 | .0099 | .0078 | .0107 | .0089 |
| | 470 | Sugar (beet or cane) | .0119 | .0133 | .0123 | .0116 | .0083 |
| | 471 | Table sirups and molasses | .0093 | .0094 | .0089 | .0092 | .0090 |
| | 472 | Molasses, blackstrap, etc. | .0092 | .0135 | .0063 | .0108 | .0089 |
| | 620 | Beverages | .0143 | .0143 | .0065 | .0145 | .0118 |
| | 630 | Ice | .0227 | .0209 | .0149 | .0237 | .0305 |
| | 680 | Canned food products | .0124 | .0125 | .0157 | .0122 | .0095 |
| 19 | | Manufactured Food | .0116 | .0118 | .0110 | .0117 | .0087 |
| | 650 | Newsprint paper | .0098 | .0112 | .0105 | .0077 | .0127 |
| | 651 | Printing paper, N.O.S. | .0117 | .0117 | .0134 | .0116 | .0105 |
| | 694 | Paper bags, wrapping paper | .0119 | .0129 | .0115 | .0110 | .0103 |
| | 695 | Paperboard, wallboard | .0116 | .0127 | .0514 | .0112 | .0109 |
| | 696 | Building paper and roofing | .0131 | .0135 | .0134 | .0128 | .0108 |
| 20 | | Paper and Products | .0113 | .0121 | .0112 | .0101 | .0108 |
| | 440 | Rosin | .0099 | .0100 | .0102 | .0093 | .0067 |
| | 441 | Turpentine | .0118 | .0107 | .0125 | .0116 | .0098 |
| | 660 | Alcohol, denatured or wood | .0133 | .0147 | .0108 | .0114 | .0131 |
| | 662 | Explosives, N.O.S. | .0379 | .0337 | .0393 | .0428 | .0342 |
| | 691 | Paints, oil and varnishes | .0136 | .0136 | .0171 | .0127 | .0112 |
| 21 | | Chemicals | .0156 | .0160 | .0121 | .0182 | .0151 |
| | 271 | Leather | .0199 | .0152 | .0195 | .0248 | .0143 |
| | 670 | Cotton cloth and fabrics | .0197 | .0221 | .0195 | .0180 | .0146 |
| | 671 | Bagging and bags | .0114 | .0141 | .0141 | .0151 | .0082 |
| 22 | | Textiles and Leather | .0173 | .0174 | .0185 | .0159 | .0129 |
| | 570 | Sewer pipe and drainitile | .0187 | .0117 | .0142 | .0154 | .0135 |
| | 699 | Glass, flat, not plate | .0132 | .0145 | .0196 | .0115 | .0114 |
| | 700 | Glass: Bottles, jars, etc. | .0127 | .0117 | .0172 | .0146 | .0135 |
| 23 | | Glass and Tile | .0127 | .0120 | .0161 | .0142 | .0128 |
| | 690 | Tobacco, manufactured | .0182 | .0220 | .0217 | .0159 | .0223 |
| | 698 | Soap and washing compounds | .0147 | .0149 | .0133 | .0154 | .0099 |
| | 701 | Manufactures miscellaneous | .0139 | .0139 | .0143 | .0134 | .0113 |
| 24 | | Miscellaneous | .0140 | .0139 | .0142 | .0144 | .0117 |



SECTION 45. PRESENT CLASSIFICATION

Analysis 45.4 Average Revenue of All Railway Traffic, per Loaded Car Mile - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | | $ | $ | $ | $ | $ |
| | | ALL COMMODITIES | .29 | .31 | .29 | .27 | .30 |
| | 10 | Wheat | .46 | .41 | .42 | .48 | .31 |
| | 20 | Corn | .44 | .47 | .58 | .41 | .33 |
| | 30 | Oats | .31 | .28 | .30 | .37 | .26 |
| | 40 | Barley and rye | .41 | .33 | .32 | .43 | .22 |
| | 162 | Flaxseed | .47 | .44 | .19 | .48 | .11 |
| | 163 | Sugar beets | .54 | .76 | .15 | .53 | - |
| 01 | | Bulk Grain and Seeds | .44 | .39 | .44 | .45 | .30 |
| | 41 | Rice | .51 | .25 | .21 | .55 | .27 |
| | 42 | Grain, N.O.S. | .25 | .22 | .19 | .31 | .24 |
| | 50 | Flour, wheat | .17 | .19 | .20 | .21 | .17 |
| | 51 | Meal, corn | .13 | .15 | .12 | .12 | .21 |
| | 52 | Flour and meal | .17 | .17 | .15 | .16 | .11 |
| | 60 | Cereal food preparations | .17 | .18 | .19 | .16 | .14 |
| | 61 | Mill products, N.O.S. | .15 | .17 | .16 | .14 | .15 |
| 02 | | Other Cereals | .17 | .18 | .18 | .15 | .16 |
| | 70 | Hay and alfalfa | .17 | .17 | .14 | .19 | .14 |
| | 71 | Straw | .23 | .24 | .15 | .24 | .22 |
| | 80 | Tobacco, leaf | .24 | .23 | .26 | .30 | .18 |
| | 90 | Cotton in bales | .24 | .16 | .23 | .26 | .13 |
| | 91 | Cotton linters, nolls | .21 | .16 | .22 | .26 | .17 |
| 03 | | Cotton, Hay and Tobacco | .22 | .18 | .23 | .24 | .17 |
| | 110 | Oranges and grapefruit | .22 | .19 | .26 | .21 | .26 |
| | 111 | Lemons, limes, and citrus | .16 | .14 | .15 | .16 | .32 |
| | 120 | Apples, fresh | .21 | .20 | .19 | .22 | .24 |
| | 121 | Bananas | .23 | .26 | .19 | .26 | .29 |
| | 122 | Berries, fresh | .31 | .26 | .46 | .27 | .30 |
| | 123 | Cantaloupes and melons | .13 | .12 | .14 | .13 | .25 |
| | 124 | Grapes, fresh | .16 | .15 | .14 | .16 | .35 |
| | 125 | Peaches, fresh | .23 | .18 | .23 | .25 | .21 |
| | 126 | Watermelons | .15 | .10 | .15 | .19 | .19 |
| | 127 | Fruits, fresh, domestic | .17 | .15 | .14 | .18 | .24 |
| | 128 | Fruits, fresh, tropical | .15 | .20 | .13 | .17 | .17 |
| | 130 | Potatoes, other than sweet | .22 | .29 | .24 | .18 | .17 |
| | 140 | Cabbage | .18 | .17 | .21 | .16 | .21 |
| | 141 | Onions | .15 | .16 | .17 | .15 | .16 |
| | 142 | Tomatoes | .14 | .13 | .17 | .13 | .18 |
| | 143 | Vegetables, fresh, N.O.S. | .14 | .14 | .22 | .14 | .20 |
| 04 | | Perishables | .18 | .18 | .22 | .17 | .21 |
| | 150 | Beans and peas, dried | .29 | .30 | .36 | .29 | .29 |
| | 151 | Fruits, dried or evaporated | .35 | .30 | .31 | .36 | .17 |
| | 152 | Vegetables, dry, N.O.S. | .19 | .18 | .25 | .19 | .16 |
| | 161 | Peanuts | .23 | .24 | .24 | .21 | .17 |
| | 164 | Products of agriculture | .25 | .24 | .24 | .27 | .16 |
| | 282 | Animal products, N.O.S. | .32 | .33 | .26 | .33 | .24 |
| | 240 | Fertilizers, N.O.S. | .32 | .33 | .33 | .28 | .24 |
| 05 | | Miscellaneous Farm Products | .28 | .28 | .29 | .29 | .20 |
| | 170 | Horses, mules, ponies | .23 | .34 | .27 | .21 | .50 |
| | 180 | Cattle and calves,single-deck | .19 | .16 | .25 | .19 | .19 |
| | 181 | Calves, double-deck | .17 | .16 | .21 | .21 | .52 |
| | 190 | Sheep and goats, single-deck | .12 | .13 | .22 | .12 | .10 |
| | 191 | Sheep and goats, double-deck | .14 | .13 | .22 | .14 | .18 |
| | 200 | Hogs, single-deck | .20 | .16 | .20 | .20 | .17 |
| | 201 | Hogs, double-deck | .17 | .15 | .27 | .20 | .23 |
| | 230 | Poultry, live | .20 | .17 | .30 | .26 | .24 |
| | 260 | Wool | .31 | .26 | .26 | .35 | .20 |
| | 270 | Hides, green | .32 | .31 | .33 | .33 | .30 |
| | 281 | Animals, live, N.O.S. | .35 | .32 | .28 | .49 | .18 |
| 06 | | Live Animals | .19 | .17 | .25 | .19 | .19 |
| | 210 | Fresh meats, N.O.S. | .20 | .19 | .24 | .20 | .21 |
| | 220 | Meats, cured, dried | .22 | .18 | .23 | .28 | .20 |
| | 221 | Butterine and margarine | .27 | .23 | .34 | .32 | .23 |
| | 222 | Packing-house products | .25 | .22 | .26 | .30 | .22 |
| | 231 | Poultry, dressed | .24 | .23 | .33 | .26 | .31 |
| | 240 | Eggs | .22 | .22 | .29 | .22 | .23 |
| | 250 | Butter | .26 | .25 | .34 | .28 | .27 |
| | 251 | Cheese | .28 | .24 | .34 | .36 | .22 |
| 07 | | Animal Products, Edible | .22 | .21 | .25 | .24 | .23 |
| | 290 | Anthracite coal | .54 | .55 | .27 | .53 | .54 |
| | 300 | Bituminous coal | .34 | .37 | .32 | .32 | .31 |
| | 310 | Coke | .35 | .41 | .25 | .32 | .27 |
| 08 | | Coal and Coke | .36 | .41 | .31 | .32 | .31 |
| | 320 | Iron ore | .51 | .47 | 1.04 | .55 | .35 |
| | 330 | Copper ore concentrates | .48 | .25 | .68 | .50 | .15 |
| | 331 | Lead ore and concentrates | .66 | .55 | .20 | .70 | .30 |
| | 332 | Zinc ore and concentrates | .32 | .34 | .37 | .31 | .28 |
| | 333 | Ores and concentrates | .32 | .32 | .31 | .33 | .24 |
| | 392 | Products of mines, N.O.S. | .35 | .39 | .24 | .33 | .36 |
| 09 | | Ores | .37 | .39 | .26 | .38 | .34 |
| | 350 | Gravel, sand, etc. | .63 | .62 | .56 | .66 | .60 |
| | 351 | Stone, broken, ground, etc. | .55 | .67 | .55 | .46 | .59 |
| | 352 | Stone, rough, N.O.S. | .38 | .43 | .25 | .41 | .30 |
| | 353 | Stone, finished, N.O.S. | .29 | .29 | .25 | .36 | .19 |
| 10 | | Sand, Stone and Gravel | .54 | .59 | .50 | .57 | .52 |
| | 390 | Phosphate rock, crude, etc. | .43 | .48 | .43 | .35 | .57 |
| | 391 | Sulphur (brimestone) | .36 | .40 | .31 | .35 | .57 |
| | 661 | Sulphuric acid | .75 | 1.08 | .49 | .78 | .80 |
| 11 | | Sulphur and Sulphuric Acid | .47 | .71 | .44 | .41 | .66 |
| | 360 | Petroleum, crude | .27 | .37 | .35 | .26 | .52 |
| | 370 | Asphalt (natural) etc. | .42 | .46 | .36 | .39 | .41 |
| | 450 | Petroleum oils, refined, etc. | .40 | .52 | .53 | .34 | .53 |
| | 451 | Fuel, road, residual oil | .39 | .65 | .50 | .32 | .45 |
| | 452 | Lubricating oils and grease | .27 | .31 | .26 | .25 | .25 |
| | 453 | Petroleum products, N.O.S. | .29 | .33 | .29 | .25 | .36 |
| 12 | | Petroleum and Products | .39 | .49 | .50 | .33 | .48 |
| | 400 | Logs | .36 | .36 | .32 | .37 | .14 |
| | 401 | Posts, poles, and piling | .28 | .32 | .26 | .23 | .27 |
| | 402 | Wood (fuel) | .31 | .41 | .29 | .31 | .14 |
| | 410 | Ties, railroad | .34 | .27 | .35 | .37 | .49 |
| | 420 | Pulpwood | .28 | .32 | .23 | .27 | .27 |
| | 430 | Lumber, shingles, and lath | .20 | .21 | .22 | .19 | .22 |
| | 431 | Box, crate, and cooperage | .23 | .19 | .27 | .23 | .17 |
| | 432 | Veneer and built-up wood | .17 | .19 | .20 | .16 | .21 |
| | 442 | Crude rubber (unreclaimed) | .49 | .49 | .58 | .44 | .31 |
| | 443 | Products of forests, N.O.S. | .21 | .21 | .22 | .20 | .20 |
| | | Forest Products | .22 | .24 | .22 | .20 | .23 |
| | 100 | Cottonseed | .59 | .58 | .60 | .53 | .27 |
| | 101 | Cottonseed meal and cake | .23 | .16 | .23 | .26 | .11 |
| | 160 | Vegetable - oil cake, etc. | .21 | .21 | .14 | .18 | .16 |
| | 450 | Cottonseed oil | .34 | .23 | .33 | .42 | .24 |
| | 451 | Linseed oil | .32 | .41 | .27 | .26 | .28 |
| | 452 | Vegetable oils, N.O.S. | .19 | .26 | .17 | .27 | .23 |
| | 280 | Fish or sea-animal oil | .23 | .26 | .11 | .19 | .29 |
| 14 | | Oils - Vegetable and Animal | .28 | .23 | .31 | .30 | .16 |
| | 490 | Iron, pig | .50 | .60 | .39 | .38 | .43 |
| | 491 | Iron and steel, 6th Class | .66 | .69 | .67 | .54 | .35 |
| | 500 | Nails, fastenings, etc. | .36 | .37 | .35 | .32 | .54 |
| | 510 | Cast-iron pipe and fittings | .28 | .30 | .25 | .32 | .23 |
| | 511 | Iron and steel pipe,fittings | .43 | .36 | .30 | .54 | .28 |
| | 512 | Iron and steel: Nails, wire | .36 | .53 | .33 | .44 | .27 |
| | 513 | Iron and steel, 5th Class | .41 | .41 | .36 | .43 | .36 |
| | 585 | Railway car wheels, axles | .42 | .34 | .05 | .57 | .47 |
| | 698 | Furnace slag | .56 | .79 | .29 | .67 | 1.00 |
| | 695 | Scrap iron and scrap steel | .55 | .58 | .40 | .53 | .53 |
| 15 | | Iron and Steel | .42 | .40 | .33 | .45 | .37 |
| | 520 | Copper: Ingot, matte, pig | .32 | .39 | .36 | .30 | .24 |
| | 521 | Copper, brass, and bronze | .59 | .54 | .44 | .53 | .16 |
| | 522 | Lead & zinc: Ingot, Bar | .27 | .28 | .27 | .27 | .21 |
| | 523 | Aluminum: Ingot, pig, slab | .46 | .43 | .34 | .68 | .23 |
| 16 | | All Other Metals | .30 | .31 | .33 | .29 | .23 |
| | 530 | Machinery and boilers | .29 | .24 | .33 | .38 | .22 |
| | 580 | Agricultural implements,etc. | .27 | .21 | .30 | .31 | .19 |
| | 581 | Vehicles, horse-drawn, etc. | .32 | .24 | .33 | .33 | .22 |
| | 582 | Tractors and parts | .28 | .22 | .35 | .30 | .15 |
| | 590 | Automobiles (passenger) | .22 | .20 | .29 | .24 | .20 |
| | 591 | Autotrucks | .23 | .20 | .34 | .26 | .19 |
| | 592 | Automobiles, K.D. and parts | .29 | .27 | .33 | .32 | .22 |
| | 593 | Automobile tires | .26 | .25 | .28 | .28 | .20 |
| | 610 | Furniture, metal | .23 | .22 | .24 | .24 | .16 |
| | 611 | Furniture, not metal | .18 | .18 | .17 | .19 | .18 |
| | 697 | Building woodwork (millwork) | .15 | .15 | .22 | .15 | .21 |
| 17 | | Appliances | .24 | .22 | .26 | .26 | .19 |
| | 540 | Cement, building | .34 | .37 | .39 | .36 | .41 |
| | 550 | Brick, common | .39 | .40 | .36 | .39 | .51 |
| | 551 | Brick, and building tile | .32 | .33 | .25 | .32 | .31 |
| | 552 | Artificial stone, N.O.S. | .37 | .25 | .36 | .32 | .39 |
| | 560 | Lime, common (quick, slaked) | .23 | .21 | .21 | .28 | .22 |
| | 561 | Plaster (stucco or wall) etc. | .25 | .29 | .26 | .22 | .26 |
| 18 | | Building Material | .41 | .42 | .33 | .45 | .34 |
| | 580 | Salt | .26 | .25 | .20 | .30 | .23 |
| | 470 | Sugar (beet or cane) | .36 | .36 | .31 | .38 | .22 |
| | 471 | Table sirups and molasses | .28 | .29 | .25 | .28 | .22 |
| | 472 | Molasses, blackstrap, etc. | .41 | .56 | .29 | .48 | .27 |
| | 620 | Beverages | .28 | .26 | .31 | .29 | .21 |
| | 630 | Ice | .62 | .61 | .70 | .51 | 1.06 |
| | 680 | Canned food products | .23 | .20 | .27 | .24 | .19 |
| 19 | | Manufactured Food | .32 | .29 | .28 | .35 | .21 |
| | 650 | Newsprint paper | .26 | .29 | .27 | .21 | .32 |
| | 651 | Printing paper, N.O.S. | .28 | .28 | .30 | .28 | .26 |
| | 694 | Paper bags, wrapping paper | .27 | .28 | .25 | .26 | .23 |
| | 695 | Paperboard, wallboard | .25 | .26 | .21 | .26 | .21 |
| | 696 | Building paper and roofing | .29 | .29 | .29 | .29 | .25 |
| 20 | | Paper and Products | .26 | .28 | .24 | .25 | .24 |
| | 440 | Rosin | .23 | .25 | .22 | .25 | .17 |
| | 441 | Turpentine | .28 | .24 | .30 | .30 | .27 |
| | 660 | Alcohol, denatured or wood | .28 | .30 | .24 | .26 | .29 |
| | 662 | Explosives, N.O.S. | .59 | .50 | .64 | .69 | .45 |
| | 691 | Paints oil and varnishes | .30 | .26 | .40 | .35 | .35 |
| 21 | | Chemicals | .33 | .31 | .27 | .42 | .32 |
| | 271 | Leather | .28 | .27 | .34 | .40 | .22 |
| | 670 | Cotton cloth and fabrics | .20 | .23 | .18 | .25 | .16 |
| | 671 | Bagging and bags | .26 | .24 | .25 | .29 | .16 |
| 22 | | Textiles and Leather | .22 | .21 | .20 | .28 | .17 |
| | 570 | Sewer pipe and drainitile | .23 | .22 | .24 | .27 | .22 |
| | 699 | Glass, flat, not plate | .39 | .36 | .53 | .36 | .58 |
| | 700 | Glass: Bottles, jars, etc. | .24 | .23 | .30 | .25 | .23 |
| 23 | | Glass and Tile | .25 | .23 | .29 | .27 | .28 |
| | 690 | Tobacco, manufactured | .34 | .39 | .39 | .27 | .40 |
| | 698 | Soap and washing compounds | .30 | .30 | .27 | .33 | .19 |
| | 701 | Manufactures miscellaneous | .28 | .28 | .29 | .30 | .24 |
| 24 | | Miscellaneous | .28 | .28 | .30 | .30 | .28 |

SECTION 45. PRESENT CLASSIFICATION

Analysis 45.5 Average Load of Railway Local Traffic, in Tons - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | ALL COMMODITIES | 32 | 32 | 31 | 27 | 57 |
| | 10 | Wheat | 44 | 42 | 41 | 44 | 43 |
| | 20 | Corn | 40 | 41 | 43 | 39 | 36 |
| | 30 | Oats | 39 | 49 | 32 | 33 | 24 |
| | 40 | Barley and rye | 39 | 35 | 35 | 40 | 39 |
| | 162 | Flaxseed | 37 | 24 | 9 | 38 | 1 |
| | 163 | Sugar beets | 40 | 36 | 7 | 40 | - |
| 01 | | Bulk Grain and Beets | 42 | 43 | 39 | 42 | 39 |
| | 41 | Rice | 27 | 15 | 19 | 29 | 5 |
| | 42 | Grain, N.O.S. | 28 | 28 | 25 | 29 | 23 |
| | 50 | Flour, wheat | 25 | 27 | 18 | 25 | 22 |
| | 51 | Meal, corn | 23 | 27 | 18 | 23 | 18 |
| | 52 | Flour and meal, edible | 21 | 24 | 13 | 24 | 22 |
| | 60 | Cereal food preparations | 20 | 18 | 22 | 21 | 23 |
| | 61 | Mill products, N.O.S. | 22 | 22 | 17 | 23 | 21 |
| 02 | | Other Cereals | 24 | 24 | 17 | 24 | 21 |
| | 70 | Hay and alfalfa | 13 | 12 | 12 | 13 | 13 |
| | 71 | Straw | 14 | 14 | 13 | 14 | 22 |
| | 80 | Tobacco, leaf | 11 | 13 | 10 | 14 | 9 |
| | 90 | Cotton in bales | 12 | 14 | 13 | 11 | - |
| | 91 | Cotton linters, noils, etc. | 18 | 12 | 18 | 21 | 26 |
| 03 | | Cotton, Hay and Tobacco | 12 | 12 | 12 | 12 | 10 |
| | 110 | Oranges and grapefruit | 17 | 14 | 14 | 17 | 15 |
| | 111 | Lemons, limes, and citrus | 15 | 17 | 15 | 15 | - |
| | 120 | Apples, fresh | 15 | 12 | 14 | 17 | 14 |
| | 121 | Bananas | 10 | 10 | 10 | 10 | 10 |
| | 122 | Berries, fresh | 9 | 9 | 9 | 9 | - |
| | 125 | Cantaloupes and melons | 11 | 13 | 15 | 11 | - |
| | 126 | Grapes, fresh | 14 | 13 | 1 | 14 | - |
| | 127 | Peaches, fresh | 14 | 11 | 14 | 14 | 6 |
| | 128 | Watermelons | 12 | 14 | 13 | 12 | 16 |
| | 127 | Fruits, fresh, domestic | 15 | 15 | 9 | 15 | 15 |
| | 128 | Fruits, fresh, tropical | 12 | 11 | 24 | 13 | - |
| | 130 | Potatoes, other than sweet | 17 | 19 | 16 | 17 | 22 |
| | 140 | Cabbage | 12 | 13 | 11 | 12 | 15 |
| | 141 | Onions | 13 | 12 | 14 | 12 | 12 |
| | 142 | Tomatoes | 11 | 12 | 12 | 11 | 3 |
| | 143 | Vegetables, fresh, N.O.S. | 11 | 10 | 10 | 11 | 16 |
| 04 | | Perishables | 14 | 13 | 11 | 15 | 15 |
| | 150 | Beans and peas, dried | 24 | 25 | 35 | 24 | 19 |
| | 151 | Fruits, dried or evaporated | 24 | 17 | 21 | 26 | 20 |
| | 152 | Vegetables, dry, N.O.S. | 12 | 10 | 12 | 15 | 14 |
| | 161 | Peanuts | 17 | 16 | 14 | 25 | 13 |
| | 164 | Products of agriculture | 23 | 22 | 21 | 24 | 28 |
| | 282 | Animal products, N.O.S. | 20 | 18 | 20 | 24 | 33 |
| | 640 | Fertilizers, N.O.S. | 26 | 26 | 24 | 34 | 25 |
| 05 | | Miscellaneous Farm Products | 25 | 21 | 23 | 26 | 24 |
| | 170 | Horses, mules, ponies | 11 | 12 | 12 | 11 | 14 |
| | 180 | Cattle and calves, single-deck | 11 | 12 | 11 | 11 | 12 |
| | 181 | Calves, double-deck | 12 | 13 | 13 | 11 | - |
| | 190 | Sheep, goats, single-deck | 7 | 7 | 7 | 6 | 8 |
| | 191 | Sheep, goats, double-deck | 10 | 9 | 11 | 10 | 9 |
| | 200 | Hogs, single-deck | 8 | 7 | 8 | 8 | 7 |
| | 201 | Hogs, double-deck | 12 | 12 | 13 | 13 | 12 |
| | 230 | Poultry, live | 9 | 9 | 10 | 9 | - |
| | 260 | Wool | 14 | 12 | 14 | 15 | - |
| | 270 | Hides, green | 23 | 23 | 24 | 23 | 17 |
| | 281 | Animals, live, N.O.S. | 14 | 13 | 21 | 16 | - |
| 06 | | Live Animals | 11 | 12 | 10 | 11 | 12 |
| | 210 | Fresh meats, N.O.S. | 12 | 12 | 12 | 12 | 12 |
| | 220 | Meats, cured, dried, etc. | 15 | 15 | 13 | 16 | 13 |
| | 221 | Butterine and margarine | 9 | 8 | 11 | 13 | 11 |
| | 222 | Packing-house products | 14 | 14 | 13 | 16 | 15 |
| | 231 | Poultry, dressed | 11 | 11 | 15 | 12 | 9 |
| | 240 | Eggs | 11 | 11 | 12 | 11 | 10 |
| | 250 | Butter | 12 | 12 | 10 | 12 | 12 |
| | 251 | Cheese | 14 | 12 | 13 | 14 | 7 |
| 07 | | Animal Products, Edible | 13 | 13 | 13 | 13 | 13 |
| | 290 | Anthracite coal | 53 | 53 | 36 | 50 | 52 |
| | 300 | Bituminous coal | 54 | 54 | 50 | 45 | 60 |
| | 310 | Coke | 32 | 32 | 35 | 31 | 29 |
| 08 | | Coal and Coke | 54 | 53 | 50 | 44 | 60 |
| | 320 | Iron ore | 57 | 56 | 58 | 57 | 58 |
| | 330 | Copper ore concentrates | 51 | 52 | 34 | 51 | - |
| | 331 | Lead ore and concentrates | 47 | - | - | 47 | - |
| | 332 | Zinc ore and concentrates | 51 | 41 | 7 | 53 | 2 |
| | 333 | Ores and concentrates | 51 | 46 | 58 | 52 | 56 |
| | 398 | Products of mines, N.O.S. | 49 | 50 | 43 | 46 | 51 |
| 09 | | Ores | 50 | 50 | 48 | 51 | 52 |
| | 350 | Gravel and sand | 54 | 56 | 49 | 55 | 60 |
| | 351 | Stone, broken, ground, etc. | 55 | 56 | 56 | 54 | 27 |
| | 352 | Stone, rough, N.O.S. | 44 | 47 | 38 | 43 | 44 |
| | 353 | Stone, finished, N.O.S. | 38 | 32 | 39 | 39 | 29 |
| 10 | | Sand, Stone and Gravel | 54 | 55 | 52 | 54 | 39 |
| | 390 | Phosphate rock, crude, etc. | 53 | 63 | 53 | 50 | 63 |
| | 391 | Sulphur (brimstone) | 54 | 36 | 40 | 57 | 51 |
| | 661 | Sulphuric acid | 48 | 46 | 51 | 45 | 53 |
| 11 | | Sulphur and Sulphuric Acid | 52 | 43 | 53 | 54 | 52 |
| | 360 | Petroleum, crude | 35 | 31 | 34 | 36 | 40 |
| | 370 | Asphalt (natural, by-products) | 34 | 33 | 37 | 34 | 35 |
| | 450 | Petroleum oils, refined | 27 | 28 | 28 | 27 | 28 |
| | 451 | Fuel, road, and residual oils | 35 | 32 | 32 | 36 | 25 |
| | 452 | Lubricating oils, etc. | 21 | 21 | 18 | 21 | 20 |
| | 453 | Petroleum products | 22 | 22 | 24 | 21 | 22 |
| 12 | | Petroleum and Products | 28 | 28 | 28 | 29 | 28 |
| | 400 | Logs | 35 | 26 | 30 | 37 | 36 |
| | 401 | Posts, poles, and piling | 26 | 28 | 27 | 25 | 26 |
| | 402 | Wood (fuel) | 28 | 25 | 25 | 29 | 33 |
| | 410 | Ties, railroad | 29 | 27 | 29 | 29 | 37 |
| | 420 | Pulpwood | 33 | 27 | 34 | 36 | 30 |
| | 430 | Lumber, shingles, and lath | 27 | 24 | 25 | 28 | 25 |
| | 431 | Box, crate, and cooperage | 23 | 19 | 21 | 24 | 24 |
| | 432 | Veneer and built-up wood | 23 | 20 | 19 | 24 | 24 |
| | 442 | Crude rubber (unreclaimed) | 35 | 35 | 1 | 30 | - |
| | 443 | Products of forests, N.O.S. | 19 | 16 | 25 | 18 | 21 |
| 13 | | Forest Products | 28 | 26 | 26 | 29 | 28 |
| | 100 | Cottonseed | 28 | 10 | 29 | 29 | 28 |
| | 101 | Cottonseed meal and cake | 28 | 25 | 26 | 29 | 5 |
| | 160 | Vegetable - oil cake, etc. | 25 | 27 | 26 | 22 | 49 |
| | 460 | Cottonseed oil | 30 | 29 | 30 | 30 | 19 |
| | 461 | Linseed oil | 25 | 26 | 34 | 25 | - |
| | 462 | Vegetable oils, N.O.S. | 30 | 30 | 30 | 30 | 31 |
| | 280 | Fish or sea-animal oil | 27 | 25 | 14 | 31 | - |
| 14 | | Oils - Vegetable and Animal | 28 | 28 | 27 | 29 | 33 |
| | 490 | Iron, pig | 53 | 52 | 56 | 49 | 59 |
| | 491 | Iron and Steel, 6th class | 43 | 40 | 58 | 46 | 21 |
| | 500 | Rails, fastenings, etc. | 31 | 28 | 34 | 38 | 26 |
| | 510 | Cast-iron pipe and fittings | 23 | 19 | 26 | 28 | 21 |
| | 511 | Iron and steel pipe, fittings | 26 | 26 | 13 | 29 | 19 |
| | 512 | Iron and steel: Nails, wire | 24 | 22 | 25 | 28 | 32 |
| | 513 | Iron and steel, 5th class | 27 | 27 | 23 | 30 | 28 |
| | 583 | Railway car wheels, axles | 24 | 20 | 36 | 31 | 38 |
| | 698 | Furnace slag | 53 | 55 | 44 | 55 | 70 |
| | 693 | Scrap iron and scrap steel | 41 | 41 | 39 | 43 | 45 |
| 15 | | Iron and Steel | 31 | 30 | 34 | 34 | 36 |
| | 520 | Copper: Ingot, matte, pig | 50 | 35 | 63 | 53 | 4 |
| | 521 | Copper, brass, and bronze | 31 | 15 | 34 | 32 | 1 |
| | 522 | Lead and zinc: Ingot, bar | 43 | 36 | 26 | 49 | 51 |
| | 523 | Aluminum: Ingot, pig, slab | 22 | 21 | 41 | 22 | - |
| 16 | | All Other Metals | 40 | 29 | 28 | 50 | 37 |
| | 530 | Machinery and boilers | 18 | 17 | 18 | 19 | 21 |
| | 580 | Agricultural implements, etc. | 13 | 13 | 19 | 13 | 17 |
| | 581 | Vehicles, horse-drawn, etc. | 10 | 10 | 13 | 13 | 19 |
| | 582 | Tractors and parts | 15 | 14 | 19 | 14 | 18 |
| | 590 | Automobiles (passenger) | 5 | 5 | 5 | 5 | 5 |
| | 591 | Autotrucks | 8 | 8 | 6 | 7 | 37 |
| | 592 | Automobiles, K.D. and parts | 14 | 13 | 16 | 20 | 17 |
| | 593 | Automobile tires | 14 | 14 | 13 | 15 | - |
| | 610 | Furniture, metal | 10 | 9 | 14 | 11 | 18 |
| 17 | | Furniture, not metal | 7 | 6 | 7 | 9 | 7 |
| | 697 | Building woodwork | 17 | 11 | 17 | 19 | 18 |
| | | Appliances | 11 | 10 | 9 | 12 | 9 |
| | 540 | Cement, building | 36 | 37 | 35 | 39 | 31 |
| | 550 | Brick, common | 37 | 40 | 35 | 36 | 36 |
| | 551 | Brick and building tile | 36 | 37 | 32 | 35 | 36 |
| | 552 | Artificial stone, N.O.S. | 29 | 28 | 36 | 32 | 30 |
| | 560 | Lime, common, quick, slaked | 25 | 25 | 22 | 24 | 26 |
| | 561 | Plaster, stucco, etc. | 26 | 25 | 27 | 28 | 20 |
| 18 | | Building Material | 35 | 34 | 33 | 37 | 31 |
| | 580 | Salt | 30 | 30 | 30 | 30 | 26 |
| | 470 | Sugar (beet or cane) | 29 | 25 | 25 | 33 | 25 |
| | 471 | Table sirups and molasses | 30 | 33 | 27 | 28 | 25 |
| | 472 | Molasses, blackstrap, etc. | 47 | 46 | 45 | 48 | 38 |
| | 620 | Beverages | 20 | 22 | 21 | 20 | 18 |
| | 630 | Ice | 26 | 28 | 21 | 25 | 45 |
| | 680 | Canned food products | 23 | 21 | 22 | 26 | 20 |
| | | Manufactured Food | 27 | 25 | 25 | 29 | 23 |
| | 690 | Newsprint paper | 26 | 25 | 26 | 26 | 26 |
| | 691 | Printing paper, N.O.S. | 22 | 22 | 23 | 24 | 27 |
| | 694 | Paper bags, wrapping paper | 22 | 21 | 23 | 24 | 22 |
| | 695 | Paperboard, wallboard | 20 | 20 | 18 | 23 | 21 |
| | 696 | Building paper and roofing | 21 | 22 | 17 | 23 | 24 |
| 20 | | Paper and Products | 22 | 21 | 18 | 24 | 25 |
| | 440 | Rosin | 16 | 24 | 14 | 32 | - |
| | 441 | Turpentine | 20 | 22 | 13 | 27 | 30 |
| | 660 | Alcohol, denatured or wood | 19 | 19 | 16 | 19 | 20 |
| | 662 | Explosives, N.O.S. | 15 | 15 | 29 | 14 | 12 |
| | 691 | Paints in oil and varnishes | 18 | 15 | 22 | 25 | 22 |
| 21 | | Chemicals | 18 | 16 | 15 | 22 | 21 |
| | 271 | Leather | 17 | 17 | 17 | 19 | 18 |
| | 670 | Cotton cloth and fabrics | 10 | 13 | 10 | 14 | 24 |
| | 671 | Bagging and bags | 18 | 17 | 18 | 18 | 44 |
| 22 | | Textiles and Leather | 15 | 16 | 12 | 17 | 23 |
| | 570 | Sewer pipe and draintile | 16 | 16 | 17 | 17 | 16 |
| | 699 | Glass, flat, not plate | 27 | 24 | 32 | 30 | 38 |
| | 700 | Glass: Bottles, jars, etc. | 17 | 17 | 19 | 17 | 17 |
| 23 | | Glass and Tile | 18 | 17 | 18 | 18 | 25 |
| | 690 | Tobacco, manufactured | 18 | 18 | 17 | 21 | 18 |
| | 698 | Soap and washing compounds | 20 | 20 | 19 | 21 | 17 |
| | 701 | Manufactures, miscellaneous | 20 | 19 | 20 | 20 | 21 |
| 24 | | Miscellaneous | - | 19 | 20 | 20 | 21 |



SECTION 45. PRESENT CLASSIFICATION

Analysis 45.6 Average Haul of Railway Local Traffic, in Miles - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | ALL COMMODITIES | 180 | 160 | 154 | 176 | 389 |
| | 10 | Wheat | 148 | 156 | 176 | 257 | 371 |
| | 20 | Corn | 174 | 169 | 135 | 188 | 207 |
| | 30 | Oats | 248 | 305 | 219 | 200 | 317 |
| | 40 | Barley and rye | 231 | 245 | 232 | 230 | 198 |
| | 162 | Flaxseed | 268 | 55 | 300 | 285 | 250 |
| | 163 | Sugar beets | 42 | 37 | 350 | 45 | - |
| 01 | | Bulk Grain and Beets | 196 | 181 | 198 | 201 | 320 |
| | 41 | Rice | 108 | 295 | 198 | 102 | 273 |
| | 42 | Grain, N.O.S. | 310 | 319 | 260 | 303 | 400 |
| | 50 | Flour, wheat | 318 | 339 | 240 | 317 | 281 |
| | 51 | Meal, corn | 308 | 313 | 313 | 315 | 199 |
| | 52 | Flour and meal, edible | 324 | 321 | 300 | 347 | 358 |
| | 60 | Cereal food preparations | 344 | 309 | 484 | 366 | 138 |
| | 61 | Mill products, N.O.S. | 233 | 239 | 266 | 225 | 258 |
| 02 | | Other Cereals | 274 | 300 | 262 | 262 | 267 |
| | 70 | Hay and alfalfa | 208 | 262 | 169 | 199 | 226 |
| | 71 | Straw | 116 | 76 | 213 | 139 | 129 |
| | 80 | Tobacco, leaf | 218 | 430 | 197 | 181 | 198 |
| | 90 | Cotton in bales | 257 | 70 | 167 | 263 | - |
| | 91 | Cotton linters, noils, etc. | 298 | 205 | 266 | 240 | 200 |
| 03 | | Cotton, Hay and Tobacco | 283 | 217 | 258 | 287 | 199 |
| | 110 | Oranges and grapefruit | 906 | 126 | 612 | 1,082 | 750 |
| | 111 | Lemons, limes, and citrus | 587 | 173 | 474 | 601 | - |
| | 120 | Apples, fresh | 399 | 464 | 301 | 386 | 199 |
| | 121 | Bananas | 495 | 302 | 712 | 345 | 431 |
| | 122 | Berries, fresh | 467 | 318 | 339 | 631 | - |
| | 125 | Cantaloupes and melons | 677 | 350 | 358 | 750 | - |
| | 126 | Grapes, fresh | 432 | 198 | 90 | 485 | - |
| | 127 | Peaches, fresh | 248 | 372 | 361 | 235 | 300 |
| | 128 | Watermelons | 328 | 207 | 249 | 351 | 346 |
| | 127 | Fruits, fresh, domestic | 338 | 291 | 139 | 366 | 265 |
| | 128 | Fruits, fresh, tropical | 390 | 335 | 253 | 661 | - |
| | 130 | Potatoes, other than sweet | 372 | 254 | 214 | 498 | 365 |
| | 140 | Cabbage | 399 | 349 | 289 | 460 | 346 |
| | 141 | Onions | 391 | 349 | 339 | 443 | 209 |
| | 142 | Tomatoes | 344 | 289 | 331 | 350 | 65 |
| | 143 | Vegetables, fresh, N.O.S. | 285 | 353 | 699 | 676 | 528 |
| 04 | | Perishables | 431 | 269 | 574 | 582 | 273 |
| | 150 | Beans and peas, dried | 317 | 228 | 131 | 403 | 328 |
| | 151 | Fruits, dried or evaporated | 136 | 148 | 527 | 122 | 585 |
| | 152 | Vegetables, dry, N.O.S. | 440 | 425 | 391 | 550 | 551 |
| | 161 | Peanuts | 159 | 209 | 127 | 254 | 70 |
| | 164 | Products of agriculture | 169 | 268 | 197 | 122 | 408 |
| | 282 | Animal products, N.O.S. | 207 | 199 | 282 | 209 | 293 |
| | 640 | Fertilizers, N.O.S. | 148 | 138 | 146 | 168 | 170 |
| 05 | | Miscellaneous Farm Products | 169 | 435 | 156 | 156 | 197 |
| | 170 | Horses, mules, ponies | 390 | 338 | 309 | 407 | 161 |
| | 180 | Cattle and calves, single-deck | 341 | 390 | 191 | 296 | 245 |
| | 181 | Calves, double-deck | 422 | 584 | 158 | 243 | - |
| | 190 | Sheep, goats, single-deck | 260 | 221 | 137 | 278 | 190 |
| | 191 | Sheep, goats, double-deck | 390 | 401 | 126 | 391 | 277 |
| | 200 | Hogs, single-deck | 193 | 233 | 146 | 198 | 197 |
| | 201 | Hogs, double-deck | 259 | 172 | 227 | 321 | 153 |
| | 230 | Poultry, live | 738 | 815 | 236 | 681 | - |
| | 260 | Wool | 304 | 157 | 392 | 471 | - |
| | 270 | Hides, green | 336 | 347 | 370 | 317 | 354 |
| | 281 | Animals, live, N.O.S. | 173 | 151 | 875 | 367 | - |
| 06 | | Live Animals | 305 | 400 | 196 | 291 | 240 |
| | 210 | Fresh meats, N.O.S. | 481 | 630 | 514 | 370 | 406 |
| | 220 | Meats, cured, dried, etc. | 691 | 851 | 604 | 482 | 541 |
| | 221 | Butterine and margarine | 610 | 565 | 984 | 695 | 416 |
| | 222 | Packing-house products | 471 | 502 | 481 | 427 | 418 |
| | 231 | Poultry, dressed | 480 | 681 | 353 | 400 | 900 |
| | 240 | Eggs | 452 | 530 | 323 | 422 | 625 |
| | 250 | Butter | 387 | 452 | 236 | 367 | 678 |
| | 251 | Cheese | 531 | 440 | 295 | 302 | 437 |
| 07 | | Animal Products, Edible | 485 | 603 | 507 | 388 | 466 |
| | 290 | Anthracite coal | 116 | 116 | 159 | 171 | 250 |
| | 300 | Bituminous coal | 243 | 202 | 198 | 182 | 359 |
| | 310 | Coke | 94 | 80 | 199 | 88 | 256 |
| 08 | | Coal and Coke | 203 | 154 | 198 | 174 | 358 |
| | 320 | Iron ore | 73 | 28 | 16 | 80 | 94 |
| | 330 | Copper ore concentrates | 21 | 91 | 134 | 21 | - |
| | 331 | Lead ore and concentrates | 33 | 10 | - | 33 | - |
| | 332 | Zinc ore and concentrates | 282 | 314 | 85 | 279 | 33 |
| | 333 | Ores and concentrates | 207 | 266 | 144 | 206 | 228 |
| | 398 | Products of mines, N.O.S. | 102 | 100 | 64 | 129 | 74 |
| 09 | | Ores | 93 | 104 | 68 | 91 | 74 |
| | 350 | Gravel and sand | 54 | 55 | 53 | 50 | 66 |
| | 351 | Stone, broken, ground, etc. | 70 | 61 | 74 | 77 | 64 |
| | 352 | Stone, rough, N.O.S. | 95 | 19 | 72 | 107 | 65 |
| | 353 | Stone, finished, N.O.S. | 138 | 125 | 96 | 158 | 206 |
| 10 | | Sand, Stone and Gravel | 99 | 53 | 55 | 98 | 65 |
| | 390 | Phosphate rock, crude, etc. | 75 | 23 | 75 | 413 | 605 |
| | 391 | Sulphur (brimstone) | 99 | 195 | 136 | 98 | 240 |
| | 661 | Sulphuric acid | 102 | 63 | 301 | 72 | 127 |
| 11 | | Sulphur and Sulphuric Acid | 86 | 80 | 85 | 88 | 146 |
| | 360 | Petroleum, crude | 175 | 144 | 153 | 183 | 58 |
| | 370 | Asphalt (natural, by-products) | 148 | 129 | 241 | 134 | 108 |
| | 450 | Petroleum oils, refined | 164 | 120 | 166 | 205 | 149 |
| | 451 | Fuel, road, and residual oils | 117 | 64 | 105 | 176 | 126 |
| | 452 | Lubricating oils, etc. | 295 | 231 | 269 | 284 | 295 |
| | 453 | Petroleum products | 227 | 246 | 90 | 306 | 121 |
| 12 | | Petroleum and Products | 159 | 115 | 164 | 199 | 147 |
| | 400 | Logs | 50 | 80 | 68 | 45 | 173 |
| | 401 | Posts, poles, and piling | 218 | 103 | 176 | 305 | 77 |
| | 402 | Wood (fuel) | 79 | 92 | 69 | 81 | 69 |
| | 410 | Ties, railroad | 134 | 96 | 108 | 169 | 70 |
| | 420 | Pulpwood | 102 | 95 | 72 | 119 | 147 |
| | 430 | Lumber, shingles, and lath | 240 | 161 | 165 | 305 | 177 |
| | 431 | Box, crate, and cooperage | 353 | 173 | 238 | 426 | 244 |
| | 432 | Veneer and built-up wood | 391 | 184 | 261 | 415 | 299 |
| | 442 | Crude rubber (unreclaimed) | 413 | 420 | 15 | 112 | - |
| | 443 | Products of forests, N.O.S. | 127 | 205 | 77 | 188 | 121 |
| 13 | | Forest Products | 145 | 155 | 122 | 152 | 149 |
| | 100 | Cottonseed | 90 | 476 | 76 | 101 | 549 |
| | 101 | Cottonseed meal and cake | 195 | 198 | 156 | 231 | 76 |
| | 160 | Vegetable - oil cake, etc. | 260 | 249 | 515 | 251 | 481 |
| | 460 | Cottonseed oil | 276 | 389 | 259 | 279 | 383 |
| | 461 | Linseed oil | 289 | 243 | 403 | 363 | - |
| | 462 | Vegetable oils, N.O.S. | 463 | 443 | 566 | 496 | 690 |
| | 280 | Fish or sea-animal oil | 295 | 463 | 466 | 193 | - |
| 14 | | Oils - Vegetable and Animal | 171 | 332 | 130 | 177 | 351 |
| | 490 | Iron, pig | 103 | 89 | 129 | 144 | 112 |
| | 491 | Iron and Steel, 6th class | 59 | 59 | 132 | 58 | 266 |
| | 500 | Rails, fastenings, etc. | 130 | 205 | 104 | 81 | 93 |
| | 510 | Cast-iron pipe and fittings | 249 | 167 | 308 | 472 | 170 |
| | 511 | Iron and steel pipe, fittings | 237 | 234 | 285 | 250 | 97 |
| | 512 | Iron and steel: Nails, wire | 215 | 217 | 324 | 188 | 227 |
| | 513 | Iron and steel, 5th class | 158 | 159 | 242 | 131 | 360 |
| | 583 | Railway car wheels, axles | 123 | 153 | 159 | 89 | 114 |
| | 698 | Furnace slag | 50 | 45 | 112 | 40 | 52 |
| | 693 | Scrap iron and scrap steel | 76 | 69 | 110 | 92 | 138 |
| 15 | | Iron and Steel | 119 | 119 | 152 | 109 | 134 |
| | 520 | Copper: Ingot, matte, pig | 328 | 132 | 284 | 406 | 125 |
| | 521 | Copper, brass, and bronze | 264 | 229 | 239 | 281 | 21 |
| | 522 | Lead and zinc: Ingot, bar | 355 | 276 | 407 | 423 | 671 |
| | 523 | Aluminum: Ingot, pig, slab | 327 | 299 | 162 | 273 | - |
| 16 | | All Other Metals | 330 | 257 | 359 | 381 | 566 |
| | 530 | Machinery and boilers | 302 | 272 | 149 | 428 | 224 |
| | 580 | Agricultural implements, etc. | 334 | 322 | 362 | 329 | 396 |
| | 581 | Vehicles, horse-drawn, etc. | 602 | 812 | 275 | 354 | 275 |
| | 582 | Tractors and parts | 285 | 286 | 350 | 270 | 452 |
| | 590 | Automobiles (passenger) | 505 | 611 | 265 | 426 | 417 |
| | 591 | Autotrucks | 605 | 698 | 260 | 421 | 740 |
| | 592 | Automobiles, K.D. and parts | 296 | 271 | 178 | 498 | 255 |
| | 593 | Automobile tires | 534 | 529 | 363 | 855 | - |
| | 610 | Furniture, metal | 349 | 389 | 411 | 279 | 348 |
| 17 | | Furniture, not metal | 443 | 452 | 295 | 486 | 364 |
| | 697 | Building woodwork | 384 | 226 | 180 | 459 | 268 |
| | | Appliances | 360 | 340 | 257 | 425 | 352 |
| | 540 | Cement, building | 135 | 95 | 160 | 158 | 113 |
| | 550 | Brick, common | 110 | 124 | 83 | 130 | 71 |
| | 551 | Brick and building tile | 177 | 187 | 157 | 160 | 123 |
| | 552 | Artificial stone, N.O.S. | 217 | 247 | 113 | 202 | 106 |
| | 560 | Lime, common, quick, slaked | 225 | 277 | 133 | 198 | 151 |
| | 561 | Plaster, stucco, etc. | 264 | 161 | 282 | 381 | 234 |
| 18 | | Building Material | 149 | 136 | 139 | 164 | 116 |
| | 580 | Salt | 246 | 246 | 160 | 247 | 358 |
| | 470 | Sugar (beet or cane) | 275 | 335 | 135 | 288 | 297 |
| | 471 | Table sirups and molasses | 362 | 458 | 501 | 268 | 803 |
| | 472 | Molasses, blackstrap, etc. | 150 | 133 | 397 | 127 | 358 |
| | 620 | Beverages | 213 | 258 | 126 | 205 | 386 |
| | 630 | Ice | 45 | 49 | 42 | 42 | 24 |
| | 680 | Canned food products | 302 | 349 | 340 | 267 | 268 |
| | | Manufactured Food | 223 | 260 | 168 | 214 | 270 |
| | 690 | Newsprint paper | 230 | 301 | 322 | 194 | 195 |
| | 691 | Printing paper, N.O.S. | 333 | 331 | 333 | 277 | 644 |
| | 694 | Paper bags, wrapping paper | 298 | 286 | 317 | 298 | 504 |
| | 695 | Paperboard, wallboard | 247 | 221 | 400 | 238 | 267 |
| | 696 | Building paper and roofing | 247 | 204 | 344 | 284 | 359 |
| 20 | | Paper and Products | 276 | 265 | 366 | 253 | 415 |
| | 440 | Rosin | 140 | 118 | 128 | 230 | - |
| | 441 | Turpentine | 475 | 175 | 301 | 838 | 491 |
| | 660 | Alcohol, denatured or wood | 265 | 247 | 497 | 275 | 351 |
| | 662 | Explosives, N.O.S. | 299 | 172 | 317 | 351 | 54 |
| | 691 | Paints in oil and varnishes | 417 | 444 | 285 | 467 | 478 |
| 21 | | Chemicals | 261 | 282 | 164 | 360 | 353 |
| | 271 | Leather | 475 | 439 | 613 | 318 | 520 |
| | 670 | Cotton cloth and fabrics | 282 | 190 | 224 | 420 | 502 |
| | 671 | Bagging and bags | 339 | 312 | 315 | 374 | 92 |
| 22 | | Textiles and Leather | 316 | 314 | 283 | 375 | 190 |
| | 570 | Sewer pipe and draintile | 208 | 284 | 145 | 154 | 172 |
| | 699 | Glass, flat, not plate | 367 | 126 | 455 | 327 | 299 |
| | 700 | Glass: Bottles, jars, etc. | 343 | 369 | 274 | 239 | 224 |
| 23 | | Glass and Tile | 297 | 353 | 154 | 191 | 255 |
| | 690 | Tobacco, manufactured | 521 | 596 | 579 | 1,599 | 501 |
| | 698 | Soap and washing compounds | 357 | 333 | 362 | 469 | 267 |
| | 701 | Manufactures, miscellaneous | 256 | 291 | 241 | 206 | 188 |
| 24 | | Miscellaneous | 260 | 292 | 249 | 214 | 197 |

SECTION 45. PRESENT CLASSIFICATION

Analysis 45.7 Average Revenue of Railway Local Traffic, per Ton Mile - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | | ¢ | ¢ | ¢ | ¢ | ¢ |
| | | ALL COMMODITIES | .0184 | .0134 | .0132 | .0138 | .0062 |
| | 10 | Wheat | .0122 | .0138 | .0132 | .0121 | .0085 |
| | 20 | Corn | .0114 | .0160 | .0180 | .0139 | .0117 |
| | 30 | Oats | .0100 | .0078 | .0118 | .0121 | .0086 |
| | 40 | Barley and rye | .0115 | .0120 | .0111 | .0115 | .0170 |
| | 162 | Flaxseed | .0136 | .0233 | .0151 | .0135 | .0300 |
| | 163 | Sugar beets | .0137 | .0195 | .0224 | .0134 | - |
| 01 | | Bulk Grain and Beets | .0125 | .0124 | .0155 | .0124 | .0091 |
| | 41 | Rice | .0212 | .0146 | .0159 | .0219 | .0158 |
| | 42 | Grain, N.O.S. | .0113 | .0097 | .0129 | .0127 | .0133 |
| | 50 | Flour, wheat | .0076 | .0084 | .0112 | .0066 | .0095 |
| | 51 | Meal, corn | .0061 | .0066 | .0074 | .0048 | .0144 |
| | 52 | Flour and meal | .0083 | .0083 | .0122 | .0057 | .0077 |
| | 60 | Cereal food preparations | .0093 | .0111 | .0060 | .0078 | .0182 |
| | 61 | Mill products, N.O.S. | .0080 | .0094 | .0105 | .0069 | .0086 |
| 02 | | Other Cereals | .0081 | .0089 | .0106 | .0072 | .0096 |
| | 70 | Hay and alfalfa | .0167 | .0188 | .0216 | .0160 | .0207 |
| | 71 | Straw | .0212 | .0300 | .0196 | .0182 | .0248 |
| | 80 | Tobacco, leaf | .0284 | .0167 | .0317 | .0279 | .0292 |
| | 90 | Cotton in bales | .0225 | .0425 | .0218 | .0219 | - |
| | 91 | Cotton linters, soils | .0180 | .0211 | .0181 | .0172 | .0178 |
| 03 | | Cotton, Hay and Tobacco | .0216 | .0194 | .0267 | .0202 | .0287 |
| | 110 | Oranges and grapefruit | .0168 | .0253 | .0192 | .0164 | .0064 |
| | 111 | Lemons, limes, and citrus | .0167 | .0160 | .0095 | .0163 | - |
| | 120 | Apples, fresh | .0182 | .0201 | .0223 | .0174 | .0234 |
| | 121 | Bananas | .0240 | .0321 | .0196 | .0234 | .0314 |
| | 122 | Berries, fresh | .0468 | .0516 | .0575 | .0406 | - |
| | 123 | Canteloupes and melons | .0173 | .0205 | .0196 | .0170 | - |
| | 124 | Grapes, fresh | .0200 | .0321 | .0850 | .0189 | - |
| | 125 | Peaches, fresh | .0244 | .0298 | .0466 | .0233 | .0383 |
| | 126 | Watermelons | .0178 | .0223 | .0151 | .0181 | .0167 |
| | 127 | Fruits, fresh, domestic | .0218 | .0199 | .0316 | .0221 | .0178 |
| | 128 | Fruits, fresh, tropical | .0216 | .0224 | .0185 | .0168 | - |
| | 130 | Potatoes, other than sweet | .0157 | .0228 | .0254 | .0128 | .0161 |
| | 140 | Cabbage | .0181 | .0172 | .0233 | .0170 | .0176 |
| | 141 | Onions | .0154 | .0167 | .0143 | .0138 | .0202 |
| | 142 | Tomatoes | .0215 | .0226 | .0204 | .0192 | .0253 |
| | 143 | Vegetables, fresh, N.O.S. | .0192 | .0209 | .0226 | .0176 | .0164 |
| 04 | | Perishables | .0185 | .0226 | .0207 | .0165 | .0211 |
| | 150 | Beans and peas, dried | .0166 | .0167 | .0223 | .0164 | .0166 |
| | 151 | Fruits, dried or evaporated | .0199 | .0193 | .0174 | .0200 | .0179 |
| | 152 | Vegetables, dry, N.O.S. | .0180 | .0180 | .0195 | .0168 | .0143 |
| | 161 | Peanuts | .0281 | .0203 | .0338 | .0213 | .0400 |
| | 164 | Products of Agriculture | .0150 | .0146 | .0143 | .0156 | .0116 |
| | 282 | Animal products, N.O.S. | .0216 | .0252 | .0170 | .0181 | .0160 |
| | 640 | Fertilizers, N.O.S. | .0156 | .0178 | .0167 | .0106 | .0135 |
| 05 | | Miscellaneous Farm Products | .0165 | .0178 | .0167 | .0154 | .0135 |
| | 170 | Horses, mules, ponies | .0208 | .0355 | .0229 | .0140 | .0517 |
| | 180 | Cattle and calves, single-deck | .0187 | .0162 | .0258 | .0190 | .0209 |
| | 181 | Calves, double-deck | .0150 | .0125 | .0360 | .0115 | - |
| | 190 | Sheep and goats, single-deck | .0228 | .0250 | .0338 | .0221 | .0258 |
| | 191 | Sheep and goats, double-deck | .0166 | .0164 | .0313 | .0166 | .0197 |
| | 200 | Hogs, single-deck | .0265 | .0243 | .0299 | .0265 | .0211 |
| | 201 | Hogs double-deck | .0169 | .0146 | .0233 | .0180 | .0251 |
| | 230 | Poultry, live | .0267 | .0220 | .0457 | .0434 | - |
| | 260 | Wool | .0304 | .0350 | .0217 | .0315 | - |
| | 270 | Hides, green | .0165 | .0165 | .0186 | .0164 | .0179 |
| | 281 | Animals, live, N.O.S. | .0326 | .0326 | .0146 | .0350 | - |
| 06 | | Live Animals | .0192 | .0165 | .0262 | .0197 | .0211 |
| | 210 | Fresh meats, N.O.S. | .0192 | .0187 | .0202 | .0196 | .0236 |
| | 220 | Meats, cured, dried | .0137 | .0108 | .0181 | .0195 | .0178 |
| | 221 | Butterine and margarine | .0251 | .0252 | .0227 | .0253 | .0358 |
| | 222 | Packing-house products | .0201 | .0191 | .0197 | .0218 | .0205 |
| | 231 | Poultry, dressed | .0303 | .0218 | .0400 | .0374 | .0207 |
| | 240 | Eggs | .0301 | .0230 | .0421 | .0337 | .0225 |
| | 250 | Butter | .0324 | .0240 | .0317 | .0357 | .0230 |
| | 251 | Cheese | .0257 | .0215 | .0228 | .0257 | .0251 |
| 07 | | Animal Products, Edible | .0207 | .0180 | .0206 | .0240 | .0207 |
| | 290 | Anthracite coal | .0118 | .0118 | .0093 | .0111 | .0078 |
| | 300 | Bituminous coal | .0073 | .0084 | .0080 | .0089 | .0057 |
| | 310 | Coke | .0155 | .0183 | .0091 | .0146 | .0111 |
| 08 | | Coal and Coke | .0081 | .0099 | .0080 | .0091 | .0057 |
| | 320 | Iron Ore | .0101 | .0100 | .0281 | .0098 | .0064 |
| | 330 | Copper ore, concentrates | .0106 | .0138 | .0138 | .0106 | - |
| | 331 | Lead ore and concentrates | .0145 | .0098 | - | .0145 | - |
| | 332 | Zinc ore and concentrates | .0062 | .0094 | .0071 | .0053 | .0100 |
| | 333 | Ores and concentrates, N.O.S. | .0070 | .0087 | .0053 | .0250 | .0075 |
| | 398 | Products of mines, N.O.S. | .0104 | .0107 | .0123 | .0094 | .0115 |
| 09 | | Ores | .0104 | .0105 | .0112 | .0093 | .0107 |
| | 350 | Gravel, sand etc. | .0132 | .0136 | .0121 | .0134 | .0119 |
| | 351 | Stone, broken, ground, etc. | .0111 | .0135 | .0112 | .0090 | .0115 |
| | 352 | Stone, rough, N.O.S. | .0162 | .0207 | .0011 | .0124 | .0111 |
| | 353 | Stone, finished, N.O.S. | .0114 | .0186 | .0128 | .0099 | .0117 |
| 10 | | Sand, Stone and Gravel | .0125 | .0139 | .0119 | .0119 | .0118 |
| | 390 | Phosphate rock, crude, etc. | .0098 | .0173 | .0092 | .0093 | .0084 |
| | 391 | Sulphur (brimstone) | .0099 | .0118 | .0113 | .0099 | .0113 |
| | 661 | Sulphuric acid | .0193 | .0323 | .0102 | .0214 | .0171 |
| 11 | | Sulphur and Sulphuric Acid | .0116 | .0261 | .0094 | .0115 | .0159 |
| | 360 | Petroleum, crude | .0117 | .0140 | .0138 | .0111 | .0186 |
| | 370 | Asphalt (natural) etc. | .0177 | .0191 | .0135 | .0163 | .0223 |
| | 450 | Petroleum oils, refined, etc. | .0233 | .0085 | .0285 | .0209 | .0257 |
| | 451 | Fuel, road, residual oils | .0197 | .0311 | .0237 | .0148 | .0263 |
| | 452 | Lubricating oils and grease | .0163 | .0175 | .0198 | .0147 | .0186 |
| | 453 | Petroleum products, N.O.S. | .0194 | .0156 | .0167 | .0137 | .0271 |
| 12 | | Petroleum and Products | .0212 | .0241 | .0263 | .0184 | .0252 |
| | 400 | Logs | .0106 | .0134 | .0111 | .0104 | .0078 |
| | 401 | Posts, poles, and piling | .0128 | .0234 | .0126 | .0111 | .0276 |
| | 402 | Wood (fuel) | .0113 | .0185 | .0110 | .0192 | .01 3 |
| | 410 | Ties, railroad | .0165 | .0189 | .0146 | .0157 | .0328 |
| | 420 | Pulpwood | .0095 | .0136 | .0078 | .0081 | .0080 |
| | 430 | Lumber, shingles, and lath | .0117 | .0178 | .0136 | .0103 | .0167 |
| | 431 | Box, crate, and cooperage | .0115 | .0180 | .0112 | .0111 | .0145 |
| | 432 | Veneer and built-up wood | .0103 | .0128 | .0143 | .0092 | .0138 |
| | 442 | Crude rubber (unreclaimed) | .0151 | .0015 | .0204 | .0178 | - |
| | 443 | Products of forests, N.O.S. | .0140 | .0182 | .0115 | .0119 | .0153 |
| | | Forest Products | .0117 | .0163 | .0122 | .0105 | .0135 |
| | 100 | Cottonseed | .0219 | .0407 | .0216 | .0205 | .0156 |
| | 101 | Cottonseed meal and cake | .0143 | .0164 | .0157 | .0133 | .0162 |
| | 160 | Vegetable - oil cake, etc. | .0096 | .0108 | .0044 | .0091 | .0074 |
| | 460 | Cottonseed oil | .0183 | .0094 | .0197 | .0183 | .0088 |
| | 461 | Linseed oil | .0161 | .0019 | .0097 | .0129 | - |
| | 462 | Vegetable oils, N.O.S. | .0088 | .0099 | .0089 | .0070 | .0061 |
| | 280 | Fish or sea-animal oil | .0143 | .0104 | .0250 | .0198 | - |
| | | Oils - Vegetable and Animal | .0163 | .0112 | .0194 | .0161 | .0073 |
| | 490 | Iron, pig | .0185 | .0156 | .0061 | .0098 | .0161 |
| | 491 | Iron and steel, 6th Class | .0176 | .0216 | .0081 | .0111 | .0126 |
| | 500 | Nails, fastenings, frogs | .0163 | .0150 | .0225 | .0165 | .0310 |
| | 510 | Cast-iron pipe and fittings | .0173 | .0225 | .0112 | .0141 | .0211 |
| | 511 | Iron and steel pipe, fittings | .0182 | .0172 | .0199 | .0228 | .0372 |
| | 512 | Iron and steel: Nails, wire | .0182 | .0178 | .0116 | .0205 | .0200 |
| | 513 | Iron and steel, 5th Class | .0190 | .0191 | .0177 | .0187 | .0171 |
| | 583 | Railway car wheels, axles | .0241 | .0230 | .0221 | .0267 | .0215 |
| | 592 | Furnace slag | .0145 | .0161 | .0082 | .0114 | .0139 |
| | 693 | Scrap iron and scrap steel | .0192 | .0208 | .0127 | .0153 | .0173 |
| | | Iron and Steel | .0181 | .0188 | .0122 | .0173 | .0178 |
| | 520 | Copper: Ingot, matte, pig | .0126 | .0207 | .0233 | .0114 | .0180 |
| | 521 | Copper, brass, and bronze | .0138 | .0224 | .0266 | .0104 | .0310 |
| | 522 | Lead and zinc: Ingot, Bar | .0089 | .0102 | .0119 | .0088 | .0088 |
| | 523 | Aluminum: Ingot, pig, slab | .0261 | .0225 | .0302 | .0315 | - |
| | | All Other Metals | .0105 | .0129 | .0143 | .0098 | .0091 |
| | 530 | Machinery and boilers | .0210 | .0193 | .0377 | .0226 | .0222 |
| | 580 | Agricultural implements, etc. | .0226 | .0205 | .0206 | .0241 | .0127 |
| | 581 | Vehicles, horse-drawn, etc. | .0141 | .0091 | .0325 | .0293 | .0231 |
| | 582 | Tractors and parts | .0256 | .0213 | .0265 | .0268 | .0144 |
| | 590 | Automobiles (passenger) | .0430 | .0377 | .0675 | .0368 | .0586 |
| | 591 | Autotrucks | .0302 | .0249 | .0774 | .0486 | .0195 |
| | 592 | Automobiles, K.D. and parts | .0207 | .0217 | .0280 | .0156 | .0354 |
| | 593 | Automobile tires | .0197 | .0199 | .0408 | .0198 | - |
| | 610 | Furniture, metal | .0257 | .0258 | .0264 | .0253 | .0214 |
| | 611 | Furniture, not metal | .0297 | .0301 | .0430 | .0267 | .0349 |
| | 697 | Building woodwork(millwork) | .0152 | .0297 | .0303 | .0128 | .0221 |
| | | Appliances | .0258 | .0214 | .0419 | .0259 | .0332 |
| | 540 | Cement, building | .0175 | .0218 | .0155 | .0160 | .0216 |
| | 550 | Brick, common | .0140 | .0139 | .0155 | .0129 | .0173 |
| | 551 | Brick, and building tile | .0126 | .0128 | .0123 | .0134 | .0140 |
| | 552 | Artificial stone, N.O.S. | .0136 | .0138 | .0187 | .0127 | .0202 |
| | 560 | Lime, common (quick slaked) | .0122 | .0104 | .0171 | .0118 | .0157 |
| | 561 | Plaster, stucco, wall, etc. | .0123 | .0170 | .0113 | .0097 | .0175 |
| | | Building Material | .0157 | .0163 | .0151 | .0152 | .0098 |
| | 380 | Salt | .0121 | .0114 | .0200 | .0128 | .0100 |
| | 470 | Sugar (beet or cane) | .0169 | .0156 | .0154 | .0168 | .0168 |
| | 471 | Table sirups and molasses | .0109 | .0093 | .0114 | .0126 | .0108 |
| | 472 | Molasses, blackstrap, etc. | .0148 | .0197 | .0098 | .0114 | .0152 |
| | 620 | Beverages | .0181 | .0168 | .0312 | .0180 | .0172 |
| | 630 | Ice | .0236 | .0214 | .0333 | .0234 | .0392 |
| | 680 | Canned food products | .0174 | .0165 | .0547 | .0180 | .0196 |
| | | Manufactured Food | .0159 | .0151 | .0159 | .0161 | .0173 |
| | 650 | Newsprint paper | .0154 | .0152 | .0181 | .0118 | .0215 |
| | 651 | Printing paper, N.O.S. | .0152 | .0153 | .0186 | .0164 | .0112 |
| | 654 | Paper bags, wrapping paper | .0156 | .0163 | .0161 | .0159 | .0125 |
| | 695 | Paperboard, wallboard | .0153 | .0167 | .0131 | .0118 | .0116 |
| | 696 | Building paper and roofing | .0165 | .0177 | .0159 | .0153 | .0142 |
| | | Paper and Products | .0155 | .0161 | .0149 | .0159 | .0127 |
| | 440 | Rosin | .0209 | .0219 | .0226 | .0147 | - |
| | 441 | Turpentine | .0169 | .0230 | .0216 | .0139 | .0151 |
| | 660 | Alcohol, denatured or wood | .0171 | .0177 | .0129 | .0161 | .0195 |
| | 662 | Explosives, N.O.S. | .0430 | .0449 | .0253 | .0268 | .1470 |
| | 691 | Paints, oil and varnishes | .0160 | .0159 | .0205 | .0151 | .0142 |
| | | Chemicals | .0201 | .0189 | .0217 | .0207 | .0199 |
| | 271 | Leather | .0207 | .0192 | .0211 | .0213 | .0178 |
| | 670 | Cotton cloth and fabrics | .0306 | .0262 | .0327 | .0237 | .0210 |
| | 671 | Bagging and bags | .0176 | .0181 | .0163 | .0179 | .0187 |
| | | Textiles and Leather | .0216 | .0199 | .0260 | .0183 | .0195 |
| | 570 | Sewer pipe and draintile | .0162 | .0146 | .0195 | .0181 | .0185 |
| | 699 | Glass, flat, not plate | .0168 | .0166 | .0114 | .0183 | .0166 |
| | 700 | Glass: Bottles, jars, etc. | .0150 | .0116 | .0218 | .0164 | .0211 |
| | | Glass and Tile | .0155 | .0142 | .0196 | .0176 | .0182 |
| | 690 | Tobacco, manufactured | .0281 | .0277 | .0312 | .0150 | .0300 |
| | 698 | Soap and washing compounds | .0167 | .0167 | .0174 | .0163 | .0199 |
| | 701 | Manufactures miscellaneous | .0176 | .0178 | .0172 | .0175 | .0180 |
| | | Miscellaneous | .0176 | .0178 | .0172 | .0175 | .0188 |



SECTION 45. PRESENT CLASSIFICATION

Analysis 45.8 Average Revenue of Railway Local Traffic, per Loaded Car Mile - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | | $ | $ | $ | $ | $ |
| | | ALL COMMODITIES | .40 | .45 | .42 | .37 | .36 |
| | 10 | Wheat | .54 | .58 | .55 | .54 | .37 |
| | 20 | Corn | .58 | .58 | .78 | .54 | .48 |
| | 30 | Oats | .39 | .38 | .38 | .40 | .21 |
| | 40 | Barley and rye | .45 | .39 | .39 | .46 | .44 |
| | 162 | Flaxseed | .51 | .56 | .43 | .51 | .63 |
| | 163 | Sugar beets | .55 | .70 | .15 | .54 | - |
| 01 | | Bulk Grain and Beets | .53 | .53 | .61 | .57 | .36 |
| | 41 | Rice | .98 | .73 | .91 | .84 | .67 |
| | 42 | Grain, N.O.S. | .32 | .27 | .46 | .37 | .31 |
| | 50 | Flour, wheat | .19 | .23 | .21 | .17 | .21 |
| | 51 | Meal, corn | .14 | .14 | .18 | .11 | .27 |
| | 52 | Flour and meal | .17 | .20 | .16 | .13 | .17 |
| | 60 | Cereal food preparations | .19 | .21 | .13 | .16 | .41 |
| | 61 | Mill products, N.O.S. | .18 | .21 | .18 | .16 | .20 |
| 02 | | Other Cereals | .19 | .22 | .19 | .18 | .20 |
| | 70 | Hay and alfalfa | .22 | .23 | .26 | .21 | .27 |
| | 71 | Straw | .30 | .14 | .26 | .25 | .35 |
| | 80 | Tobacco, leaf | .31 | .22 | .33 | .33 | .28 |
| | 90 | Cotton in bales | .27 | .59 | .33 | .25 | - |
| | 91 | Cotton linters, soils | .33 | .27 | .33 | .34 | .46 |
| 03 | | Cotton, Hay and Tobacco | .28 | .24 | .33 | .24 | .28 |
| | 110 | Oranges and grapefruit | .29 | .37 | .28 | .29 | .09 |
| | 111 | Lemons, limes, and citrus | .25 | .78 | .46 | .25 | - |
| | 120 | Apples, fresh | .29 | .25 | .31 | .30 | .33 |
| | 121 | Bananas | .25 | .34 | .21 | .32 | .33 |
| | 122 | Berries, fresh | .43 | .51 | .52 | .38 | - |
| | 123 | Canteloupes and melons | .20 | .27 | .33 | .19 | - |
| | 124 | Grapes, fresh | .28 | .42 | .98 | .26 | - |
| | 125 | Peaches, fresh | .34 | .32 | .59 | .34 | .23 |
| | 126 | Watermelons | .22 | .31 | .20 | .22 | .27 |
| | 127 | Fruits, fresh, domestic | .32 | .29 | .30 | .33 | .28 |
| | 128 | Fruits, fresh, tropical | .27 | .28 | .45 | .25 | - |
| | 130 | Potatoes, other than sweet | .28 | .42 | .41 | .22 | .36 |
| | 140 | Cabbage | .23 | .22 | .27 | .21 | .26 |
| | 141 | Onions | .20 | .21 | .18 | .19 | .25 |
| | 142 | Tomatoes | .25 | .29 | .25 | .21 | .25 |
| | 143 | Vegetables, fresh, N.O.S. | .21 | .22 | .25 | .19 | .17 |
| 04 | | Perishables | .26 | .31 | .25 | .25 | .32 |
| | 150 | Beans and peas, dried | .41 | .45 | .78 | .39 | .52 |
| | 151 | Fruits, dried or evaporated | .49 | .34 | .57 | .53 | .56 |
| | 152 | Vegetables, dry, N.O.S. | .21 | .19 | .25 | .20 | .21 |
| | 161 | Peanuts | .50 | .34 | .49 | .53 | .52 |
| | 164 | Products of Agriculture | .35 | .32 | .30 | .37 | .33 |
| | 282 | Animal products, N.O.S. | .41 | .45 | .35 | .44 | .33 |
| | 640 | Fertilizers, N.O.S. | .42 | .46 | .41 | .38 | .33 |
| 05 | | Miscellaneous Farm Products | .39 | .39 | .41 | .38 | .33 |
| | 170 | Horses, mules, ponies | .24 | .42 | .27 | .22 | .72 |
| | 180 | Cattle and calves, single-deck | .21 | .19 | .29 | .21 | .25 |
| | 181 | Calves, double-deck | .19 | .16 | .16 | .25 | - |
| | 190 | Sheep and goats, single-deck | .16 | .19 | .26 | .15 | .21 |
| | 191 | Sheep and goats, double-deck | .17 | .16 | .34 | .18 | .19 |
| | 200 | Hogs, single-deck | .22 | .21 | .24 | .22 | .19 |
| | 201 | Hogs, double-deck | .21 | .18 | .30 | .21 | .31 |
| | 230 | Poultry, live | .28 | .31 | .49 | .26 | - |
| | 260 | Wool | .47 | .43 | .32 | .49 | - |
| | 270 | Hides, green | .38 | .34 | .44 | .34 | .31 |
| | 281 | Animals, live, N.O.S. | .46 | .45 | .30 | .48 | - |
| 06 | | Live Animals | .21 | .20 | .28 | .22 | .25 |
| | 210 | Fresh meats, N.O.S. | .23 | .22 | .25 | .24 | .30 |
| | 220 | Meats, cured, dried | .21 | .16 | .23 | .32 | .24 |
| | 221 | Butterine and margarine | .24 | .21 | .26 | .35 | .40 |
| | 222 | Packing-house products | .29 | .27 | .27 | .35 | .31 |
| | 231 | Poultry, dressed | .36 | .25 | .52 | .46 | .18 |
| | 240 | Eggs | .33 | .25 | .51 | .37 | .24 |
| | 250 | Butter | .40 | .29 | .35 | .45 | .29 |
| | 251 | Cheese | .36 | .31 | .37 | .38 | .17 |
| 07 | | Animal Products, Edible | .27 | .23 | .27 | .32 | .28 |
| | 290 | Anthracite coal | .63 | .48 | .33 | .75 | .41 |
| | 300 | Bituminous coal | .40 | .46 | .40 | .44 | .30 |
| | 310 | Coke | .50 | .51 | .32 | .46 | .32 |
| 08 | | Coal and Coke | .44 | .53 | .40 | .46 | .34 |
| | 320 | Iron ore | .96 | 1.65 | .54 | .54 | .58 |
| | 330 | Copper ore, concentrates | .54 | .72 | .47 | .55 | - |
| | 331 | Lead ore and concentrates | .68 | - | - | .68 | - |
| | 332 | Zinc ore and concentrates | .32 | .22 | .29 | .33 | .22 |
| | 333 | Ores and concentrates | .36 | .40 | .31 | .34 | .42 |
| | 398 | Products of mines, N.O.S. | .51 | .54 | .54 | .44 | .59 |
| 09 | | Ores | .50 | .59 | .54 | .47 | .52 |
| | 350 | Gravel, sand, etc. | .78 | .76 | .41 | .73 | .78 |
| | 351 | Stone, broken, ground, etc. | .68 | .76 | .65 | .68 | .68 |
| | 352 | Stone, rough, N.O.S. | .72 | .98 | .55 | .53 | .73 |
| | 353 | Stone, finished, N.O.S. | .55 | .59 | .51 | .55 | .54 |
| 10 | | Sand, Stone and Gravel | .68 | .77 | .62 | .64 | .71 |
| | 390 | Phosphate rock, crude, etc. | .49 | 3.17 | .49 | .48 | .53 |
| | 391 | Sulphur (brimstone) | .54 | .57 | .65 | .53 | .59 |
| | 661 | Sulphuric acid | .94 | 1.50 | .52 | .98 | .91 |
| 11 | | Sulphur and Sulphuric Acid | .61 | 1.14 | .50 | .63 | .82 |
| | 360 | Petroleum, crude | .41 | .44 | .47 | .46 | 1.89 |
| | 370 | Asphalt (natural) etc. | .61 | .64 | .50 | .56 | .78 |
| | 450 | Petroleum oils, refined | .66 | .71 | .81 | .57 | .72 |
| | 451 | Fuel, road, residual oil | .99 | 1.01 | .77 | .54 | .67 |
| | 452 | Lubricating oils and grease | .34 | .37 | .36 | .31 | .37 |
| | 453 | Petroleum products, N.O.S. | .35 | .35 | .56 | .29 | .80 |
| 12 | | Petroleum and Products | .61 | .68 | .76 | .53 | .71 |
| | 400 | Logs | .37 | .35 | .33 | .39 | .28 |
| | 401 | Posts, poles, and piling | .33 | .67 | .34 | .28 | .78 |
| | 402 | Wood (fuel) | .32 | .46 | .28 | .32 | .47 |
| | 410 | Ties, railroad | .48 | .51 | .43 | .47 | 1.23 |
| | 420 | Pulpwood | .31 | .38 | .27 | .29 | .24 |
| | 430 | Lumber, shingles, and lath | .32 | .43 | .34 | .29 | .43 |
| | 431 | Box, crate, and cooperage | .36 | .35 | .24 | .37 | .35 |
| | 432 | Veneer and built-up wood | .24 | .26 | .28 | .23 | .34 |
| | 442 | Crude rubber (unreclaimed) | .53 | .53 | .20 | .54 | - |
| | 443 | Products of forests, N.O.S. | .27 | .30 | .29 | .22 | .33 |
| | | Forest Products | .32 | .43 | .32 | .30 | .39 |
| | 100 | Cottonseed | .61 | .40 | .63 | .60 | .43 |
| | 101 | Cottonseed meal and cake | .40 | .41 | .41 | .39 | .08 |
| | 160 | Vegetable - oil cake, etc. | .24 | .30 | .12 | .20 | .37 |
| | 460 | Cottonseed oil | .55 | .27 | .60 | .55 | .16 |
| | 461 | Linseed oil | .41 | .50 | .33 | .33 | - |
| | 462 | Vegetable oils, N.O.S. | .26 | .29 | .26 | .21 | .19 |
| | 280 | Fish or sea-animal oil | .29 | .26 | .35 | .65 | - |
| | | Oils - Vegetable and Animal | .46 | .32 | .52 | .47 | .21 |
| | 490 | Iron, pig | .67 | .82 | .45 | .46 | .95 |
| | 491 | Iron and steel, 6th Class | .75 | .88 | .49 | .82 | .27 |
| | 500 | Nails, fastenings, etc. | .51 | .42 | .78 | .53 | .82 |
| | 510 | Cast-iron pipe and fittings | .40 | .43 | .37 | .40 | .44 |
| | 511 | Iron and steel pipe, fittings | .49 | .46 | .27 | .66 | .75 |
| | 512 | Iron and steel: Nails, wire | .40 | .34 | .38 | .44 | .44 |
| | 513 | Iron and steel, 5th Class | .53 | .53 | .41 | .57 | .49 |
| | 583 | Railway car wheels, axles | .60 | .47 | .79 | .83 | .83 |
| | 592 | Furnace slag | .77 | .89 | .36 | .80 | .98 |
| | 693 | Scrap iron and scrap steel | .80 | .86 | .50 | .66 | .78 |
| | | Iron and Steel | .56 | .57 | .42 | .59 | .60 |
| | 520 | Copper: Ingot, matte, pig | .65 | .78 | 1.47 | .51 | .07 |
| | 521 | Copper, brass, and bronze | .43 | .34 | .90 | .34 | .03 |
| | 522 | Lead & zinc: Ingot, bar | .38 | .37 | .31 | .40 | .45 |
| | 523 | Aluminum: Ingot, pig, slab | .58 | .48 | 1.23 | .69 | - |
| | | All Other Metals | .42 | .38 | .40 | .46 | .33 |
| | 530 | Machinery and boilers | .38 | .34 | .68 | .45 | .47 |
| | 580 | Agricultural implements, etc. | .31 | .26 | .39 | .34 | .21 |
| | 581 | Vehicles, horse-drawn, etc. | .15 | .09 | .44 | .39 | .43 |
| | 582 | Tractors and parts | .38 | .30 | .51 | .38 | .26 |
| | 590 | Automobiles (passenger) | .24 | .21 | .38 | .28 | .29 |
| | 591 | Autotrucks | .25 | .21 | .52 | .17 | .51 |
| | 592 | Automobiles, K.D. and parts | .30 | .30 | .47 | .32 | .60 |
| | 593 | Automobile tires | .29 | .28 | .34 | .30 | - |
| | 610 | Furniture, metal | .26 | .25 | .37 | .28 | .38 |
| | 611 | Furniture, not metal | .23 | .20 | .31 | .24 | .24 |
| | 697 | Building woodwork (millwork) | .27 | .33 | .52 | .24 | .43 |
| | | Appliances | .28 | .26 | .41 | .28 | .29 |
| | 540 | Cement, building | .67 | .82 | .55 | .63 | .68 |
| | 550 | Brick, common | .52 | .56 | .54 | .46 | .63 |
| | 551 | Brick, and building tile | .46 | .45 | .39 | .47 | .51 |
| | 552 | Artificial stone, N.O.S. | .40 | .38 | .68 | .41 | .61 |
| | 560 | Lime, common (quick, slaked) | .30 | .26 | .39 | .34 | .41 |
| | 561 | Plaster (stucco or wall) etc. | .33 | .43 | .31 | .27 | .29 |
| | | Building Material | .56 | .56 | .53 | .56 | .54 |
| | 380 | Salt | .36 | .34 | .61 | .38 | .26 |
| | 470 | Sugar (beet or cane) | .58 | .60 | .39 | .57 | .42 |
| | 471 | Table sirups and molasses | .33 | .30 | .33 | .36 | .27 |
| | 472 | Molasses, blackstrap, etc. | .70 | .92 | .65 | .70 | .59 |
| | 620 | Beverages | .38 | .38 | .67 | .36 | .32 |
| | 630 | Ice | .65 | .61 | .78 | .63 | 1.78 |
| | 680 | Canned food products | .41 | .35 | .60 | .47 | .39 |
| | | Manufactured Food | .44 | .38 | .41 | .49 | .40 |
| | 650 | Newsprint paper | .40 | .38 | .51 | .39 | .36 |
| | 651 | Printing paper, N.O.S. | .34 | .34 | .42 | .39 | .31 |
| | 654 | Paper bags, wrapping paper | .35 | .35 | .38 | .36 | .28 |
| | 695 | Paperboard, wallboard | .33 | .34 | .23 | .33 | .31 |
| | 696 | Building paper and roofing | .36 | .39 | .27 | .36 | .34 |
| | | Paper and Products | .34 | .35 | .28 | .36 | .32 |
| | 440 | Rosin | .34 | .34 | .31 | .34 | .31 |
| | 441 | Turpentine | .34 | .32 | .29 | .38 | .16 |
| | 660 | Alcohol, denatured or wood | .33 | .34 | .21 | .32 | .40 |
| | 662 | Explosives, N.O.S. | .68 | .67 | .77 | .66 | 1.85 |
| | 691 | Paints, oil and varnishes | .29 | .24 | .42 | .28 | .31 |
| | | Chemicals | .36 | .32 | .34 | .45 | .42 |
| | 271 | Leather | .36 | .33 | .43 | .32 | .33 |
| | 670 | Cotton cloth and fabrics | .35 | .35 | .30 | .34 | .51 |
| | 671 | Bagging and bags | .31 | .32 | .29 | .32 | .77 |
| | | Textiles and Leather | .33 | .33 | .33 | .32 | .46 |
| | 570 | Sewer pipe and draintile | .27 | .24 | .34 | .31 | .30 |
| | 699 | Glass, flat, not plate | .47 | .41 | .36 | .56 | .64 |
| | 700 | Glass, bottles, jars, etc. | .26 | .26 | .29 | .29 | .36 |
| | | Glass and Tile | .28 | .26 | .35 | .31 | .46 |
| | 690 | Tobacco, manufactured | .51 | .51 | .54 | .51 | .57 |
| | 698 | Soap and washing compounds | .34 | .34 | .33 | .35 | .34 |
| | 701 | Manufactures miscellaneous | .35 | .35 | .34 | .35 | .39 |
| | | Miscellaneous | .35 | .35 | .35 | .35 | .40 |

Analysis 45.9 Average Load of Railway Interline Traffic Originated or Terminated, in Tons - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | ALL COMMODITIES | 28 | 28 | 28 | 24 | 49 |
| | 10 | Wheat | 43 | 42 | 42 | 44 | 39 |
| | 20 | Corn | 46 | 60 | 36 | 38 | 35 |
| | 30 | Oats | 31 | 32 | 24 | 31 | 89 |
| | 40 | Barley and rye | 38 | 33 | 29 | 40 | 31 |
| | 169 | Flaxseed | 39 | 43 | 26 | 39 | 19 |
| | 163 | Sugar beets | 37 | 37 | 21 | 37 | - |
| 01 | | Bulk Grain and Beets | 42 | 45 | 37 | 41 | 37 |
| | 41 | Rice | 23 | 23 | 21 | 25 | 23 |
| | 42 | Grain, N.O.S. | 26 | 24 | 23 | 29 | 22 |
| | 50 | Flour, wheat | 24 | 26 | 18 | 25 | 22 |
| | 51 | Meal, corn | 21 | 23 | 17 | 24 | 19 |
| | 52 | Flour and meal, edible | 23 | 24 | 16 | 27 | 17 |
| | 60 | Cereal food preparations | 18 | 16 | 21 | 19 | 19 |
| | 61 | Mill products, N.O.S. | 22 | 22 | 18 | 23 | 21 |
| 02 | | Other Cereals | 23 | 24 | 18 | 24 | 21 |
| | 70 | Hay and alfalfa | 12 | 12 | 12 | 13 | 12 |
| | 71 | Straw | 12 | 12 | 13 | 14 | 12 |
| | 80 | Tobacco, leaf | 10 | 12 | 10 | 14 | 10 |
| | 90 | Cotton in bales | 14 | 15 | 16 | 13 | 14 |
| | 91 | Cotton linters, noils, etc. | 19 | 19 | 19 | 21 | 19 |
| 03 | | Cotton, Hay and Tobacco | 13 | 12 | 14 | 13 | 11 |
| | 110 | Oranges and grapefruit | 17 | 17 | 17 | 17 | 17 |
| | 111 | Lemons, limes, and citrus | 15 | 15 | 15 | 14 | 15 |
| | 120 | Apples, fresh | 17 | 16 | 16 | 17 | 13 |
| | 121 | Bananas | 10 | 10 | 10 | 10 | 10 |
| | 122 | Berries, fresh | 13 | 12 | 11 | 15 | 8 |
| | 125 | Cantaloupes and melons | 11 | 11 | 11 | 11 | 12 |
| | 126 | Grapes, fresh | 13 | 12 | 13 | 14 | 13 |
| | 127 | Peaches, fresh | 12 | 11 | 13 | 14 | 13 |
| | 126 | Watermelons | 13 | 13 | 13 | 12 | 15 |
| | 127 | Fruits, fresh, domestic | 13 | 13 | 13 | 14 | 14 |
| | 128 | Fruits, fresh, tropical | 12 | 14 | 12 | 13 | 12 |
| | 130 | Potatoes, other than sweet | 17 | 18 | 18 | 17 | 16 |
| | 140 | Cabbage | 13 | 12 | 12 | 13 | 13 |
| | 141 | Onions | 13 | 12 | 13 | 14 | 12 |
| | 142 | Tomatoes | 10 | 10 | 10 | 10 | 10 |
| | 143 | Vegetables, fresh, N.O.S. | 11 | 11 | 11 | 11 | 12 |
| 04 | | Perishables | 14 | 14 | 13 | 15 | 14 |
| | 150 | Beans and peas, dried | 28 | 24 | 27 | 30 | 27 |
| | 151 | Fruits, dried or evaporated | 32 | 24 | 33 | 34 | 19 |
| | 152 | Vegetables, dry, N.O.S. | 14 | 13 | 14 | 14 | 12 |
| | 161 | Peanuts | 15 | 15 | 14 | 16 | 15 |
| | 164 | Products of agriculture | 21 | 21 | 21 | 20 | 20 |
| | 282 | Animal products, N.O.S. | 19 | 18 | 19 | 20 | 19 |
| | 640 | Fertilizers, N.O.S. | 28 | 27 | 27 | 31 | 26 |
| 05 | | Miscellaneous Farm Products | 23 | 21 | 23 | 25 | 21 |
| | 170 | Horses, mules, ponies | 12 | 11 | 12 | 12 | 11 |
| | 180 | Cattle and calves, single-deck | 11 | 11 | 11 | 11 | 11 |
| | 181 | Calves, double-deck | 12 | 12 | 11 | 11 | 16 |
| | 190 | Sheep, goats, single-deck | 7 | 8 | 8 | 7 | 7 |
| | 191 | Sheep, goats, double-deck | 10 | 9 | 11 | 10 | 9 |
| | 200 | Hogs, single-deck | 9 | 10 | 8 | 8 | 7 |
| | 201 | Hogs, double-deck | 12 | 12 | 13 | 12 | 12 |
| | 230 | Poultry, live | 9 | 9 | 10 | 9 | 12 |
| | 260 | Wool | 14 | 13 | 9 | 16 | 16 |
| | 270 | Hides, green | 22 | 21 | 23 | 23 | 25 |
| | 281 | Animals, live, N.O.S. | 16 | 15 | 23 | 16 | - |
| 06 | | Live Animals | 11 | 12 | 12 | 11 | 11 |
| | 210 | Fresh meats, N.O.S. | 12 | 12 | 13 | 12 | 13 |
| | 220 | Meats, cured, dried | 15 | 15 | 14 | 16 | 15 |
| | 221 | Butterine and margarine | 13 | 12 | 12 | 14 | 23 |
| | 222 | Packing-house products | 17 | 18 | 16 | 17 | 16 |
| | 231 | Poultry, dressed | 11 | 11 | 12 | 11 | 12 |
| | 240 | Eggs | 12 | 12 | 9 | 12 | 10 |
| | 250 | Butter | 12 | 12 | 11 | 12 | 12 |
| | 251 | Cheese | 14 | 14 | 13 | 15 | 13 |
| 07 | | Animal Products, Edible | 13 | 12 | 13 | 13 | 14 |
| | 290 | Anthracite coal | 16 | 16 | 36 | 29 | 19 |
| | 300 | Bituminous coal | 52 | 53 | 50 | 43 | 57 |
| | 310 | Coke | 30 | 30 | 31 | 31 | 30 |
| 08 | | Coal and Coke | 51 | 51 | 50 | 42 | 57 |
| | 320 | Iron ore | 63 | 63 | 57 | 61 | 72 |
| | 330 | Copper ore concentrates | 49 | 32 | 47 | 57 | - |
| | 331 | Lead ore and concentrates | 50 | 46 | 61 | 51 | 45 |
| | 332 | Zinc ore and concentrates | 49 | 47 | 48 | 50 | 56 |
| | 333 | Ores and concentrates | 48 | 47 | 50 | 46 | 54 |
| | 392 | Products of mines, N.O.S. | 41 | 43 | 36 | 41 | 44 |
| 09 | | Ores | 46 | 47 | 37 | 47 | 50 |
| | 350 | Gravel and sand | 52 | 52 | 51 | 53 | 55 |
| | 351 | Stone, broken, ground, etc. | 51 | 50 | 52 | 51 | 50 |
| | 352 | Stone, rough, N.O.S. | 37 | 36 | 37 | 40 | 29 |
| | 353 | Stone, finished, N.O.S. | 30 | 31 | 23 | 31 | 27 |
| 10 | | Sand, Stone, and Gravel | 46 | 42 | 47 | 49 | 47 |
| | 390 | Phosphate rock, crude, etc. | 41 | 37 | 38 | 61 | 50 |
| | 391 | Sulphur (brimstone) | 43 | 37 | 38 | 44 | 49 |
| | 661 | Sulphuric acid | 47 | 43 | 50 | 45 | 54 |
| 11 | | Sulphur and Sulphuric Acid | 43 | 40 | 42 | 46 | 51 |
| | 360 | Petroleum, crude | 33 | 32 | 31 | 33 | 38 |
| | 370 | Asphalt (natural, by-products) | 33 | 33 | 33 | 35 | 35 |
| | 450 | Petroleum oils, refined | 27 | 27 | 27 | 26 | 26 |
| | 451 | Fuel, road, and residual oils | 32 | 29 | 31 | 32 | 31 |
| | 458 | Lubricating oils, etc. | 21 | 21 | 21 | 21 | 19 |
| | 453 | Petroleum products | 23 | 24 | 25 | 22 | 26 |
| 12 | | Petroleum and Products | 27 | 27 | 27 | 27 | 27 |
| | 400 | Logs | 29 | 29 | 26 | 30 | 27 |
| | 401 | Posts, poles, and piling | 26 | 30 | 28 | 24 | 35 |
| | 402 | Wood (fuel) | 28 | 22 | 32 | 28 | 25 |
| | 410 | Ties, railroad | 33 | 30 | 30 | 37 | 31 |
| | 420 | Pulpwood | 31 | 28 | 30 | 34 | 31 |
| | 430 | Lumber, shingles, and lath | 24 | 24 | 24 | 25 | 26 |
| | 431 | Box, crate, and cooperage | 22 | 22 | 21 | 23 | 23 |
| | 432 | Veneer and built-up wood | 24 | 22 | 22 | 25 | 23 |
| | 462 | Crude rubber (unreclaimed) | 37 | 37 | 29 | 31 | 44 |
| | 463 | Products of forests, N.O.S. | 17 | 16 | 20 | 18 | 18 |
| 13 | | Forest Products | 25 | 24 | 24 | 25 | 26 |
| | 100 | Cottonseed | 26 | 30 | 24 | 28 | 20 |
| | 101 | Cottonseed meal and cake | 24 | 29 | 22 | 24 | 23 |
| | 160 | Vegetable - oil cake, etc. | 25 | 26 | 21 | 21 | 36 |
| | 460 | Cottonseed oil | 29 | 26 | 30 | 29 | 30 |
| | 461 | Linseed oil | 25 | 25 | 27 | 26 | 23 |
| | 462 | Vegetable oils, N.O.S. | 29 | 29 | 30 | 29 | 26 |
| 280 | | Fish or sea-animal oil | 29 | 28 | 28 | 30 | 33 |
| | | Oils - Vegetable and Animal | 27 | 27 | 26 | 27 | 28 |
| | 490 | Iron, pig | 51 | 49 | 55 | 44 | 51 |
| | 491 | Iron and steel, 6th class | 46 | 46 | 47 | 49 | 32 |
| | 500 | Rails, fastenings, etc. | 21 | 28 | 33 | 19 | 38 |
| | 510 | Cast-iron pipe and fittings | 23 | 21 | 24 | 27 | 21 |
| | 511 | Iron and steel pipe, fittings | 28 | 26 | 24 | 32 | 23 |
| | 512 | Iron and steel: Rails, wire | 24 | 23 | 23 | 28 | 24 |
| | 513 | Iron and steel: 5th class | 27 | 26 | 25 | 33 | 27 |
| | 583 | Railway car wheels, axles | 26 | 21 | 32 | 27 | 27 |
| | 692 | Furnace slag | 52 | 49 | 54 | 49 | 72 |
| | 693 | Scrap iron and scrap steel | 39 | 38 | 39 | 42 | 38 |
| 15 | | Iron and Steel | 29 | 28 | 31 | 33 | 28 |
| | 520 | Copper: Ingot, matte, pig | 41 | 34 | 53 | 45 | 31 |
| | 521 | Copper, brass and bronze, bar | 26 | 22 | 15 | 11 | 15 |
| | 522 | Lead and zinc: Ingot, bar | 44 | 39 | 39 | 46 | 46 |
| | 523 | Aluminum: Ingot, pig, slab | 26 | 26 | 28 | 28 | 6 |
| 16 | | All Other Metals | 42 | 35 | 37 | 46 | 44 |
| | 530 | Machinery and boilers | 16 | 15 | 17 | 17 | 15 |
| | 580 | Agricultural Implements, etc. | 15 | 15 | 17 | 15 | 15 |
| | 581 | Vehicles, horse-drawn, etc. | 13 | 12 | 14 | 13 | 17 |
| | 582 | Tractors and parts | 16 | 15 | 14 | 17 | 12 |
| | 590 | Automobiles (passenger) | 5 | 5 | 5 | 6 | 5 |
| | 591 | Autotrucks | 8 | 8 | 9 | 8 | 6 |
| | 592 | Automobiles, K.D. and parts | 17 | 16 | 18 | 19 | 15 |
| | 593 | Automobile tires | 14 | 14 | 11 | 15 | 13 |
| | 610 | Furniture, metal | 11 | 10 | 11 | 13 | 10 |
| | 611 | Furniture, not metal | 7 | 7 | 7 | 8 | 7 |
| | 697 | Building woodwork | 20 | 17 | 18 | 22 | 18 |
| | | Appliances | 11 | 11 | 10 | 12 | 8 |
| 17 | | Cement, building | 38 | 38 | 39 | 39 | 35 |
| | 550 | Brick, common | 35 | 36 | 33 | 35 | 37 |
| | 551 | Brick, and building tile | 34 | 35 | 29 | 35 | 36 |
| | 552 | Artificial stone, N.O.S. | 21 | 19 | 28 | 24 | 34 |
| | 560 | Lime, common, quick, slaked | 23 | 23 | 24 | 23 | 21 |
| | 561 | Plaster, stucco, etc. | 26 | 24 | 28 | 28 | 23 |
| 18 | | Building Material | 33 | 33 | 34 | 34 | 30 |
| | 580 | Salt | 27 | 28 | 26 | 27 | 26 |
| | 470 | Sugar (beet or cane) | 31 | 29 | 24 | 33 | 24 |
| | 471 | Table syrups and molasses | 30 | 29 | 29 | 31 | 24 |
| | 472 | Molasses, blackstrap, etc. | 44 | 40 | 44 | 46 | 40 |
| | 620 | Beverages | 18 | 17 | 21 | 19 | 17 |
| | 630 | Ice | 28 | 30 | 28 | 24 | 24 |
| | 680 | Canned food products | 24 | 22 | 21 | 28 | 17 |
| | | Manufactured Food | 27 | 25 | 25 | 30 | 21 |
| | 650 | Newsprint paper | 26 | 26 | 25 | 27 | 26 |
| | 651 | Printing paper, N.O.S. | 23 | 22 | 22 | 4 | 23 |
| | 694 | Paper bags, wrapping paper | 22 | 21 | 22 | 23 | 23 |
| | 695 | Paperboard, wallboard | 21 | 21 | 21 | 23 | 28 |
| | 696 | Building paper, roofing | 22 | 22 | 23 | 23 | 22 |
| 20 | | Paper and Products | 23 | 23 | 22 | 24 | 22 |
| | 640 | Rosin | 23 | 25 | 22 | 26 | 24 |
| | 641 | Turpentine | 23 | 20 | 24 | 25 | 30 |
| | 660 | Alcohol, denatured or wood | 21 | 20 | 21 | 23 | 20 |
| | 662 | Explosives, N.O.S. | 15 | 16 | 15 | 16 | 13 |
| | 691 | Paints in oil and varnishes | 22 | 20 | 24 | 25 | 19 |
| | | Chemicals | 21 | 17 | 22 | 21 | 19 |
| | 271 | Leather | 17 | 17 | 17 | 16 | 14 |
| | 670 | Cotton cloth and fabrics | 10 | 10 | 9 | 13 | 11 |
| | 671 | Bagging and bags | 18 | 15 | 17 | 19 | 17 |
| | | Textiles and Leather | 13 | 13 | 10 | 17 | 14 |
| | 570 | Sewer pipe and draintile | 19 | 20 | 17 | 19 | 16 |
| | 699 | Glass, flat, not plate | 31 | 25 | 26 | 31 | 40 |
| | 700 | Glass: Bottles, jars, etc. | 17 | 17 | 17 | 17 | 17 |
| | | Glass and Tile | 19 | 18 | 17 | 19 | 22 |
| | 690 | Tobacco, manufactured | 18 | 18 | 18 | 19 | 17 |
| | 698 | Soap and washing compounds | 20 | 20 | 20 | 21 | 20 |
| | 701 | Manufactures, miscellaneous | 20 | 20 | 20 | 20 | 23 |
| 24 | | Miscellaneous | 20 | 20 | 20 | 20 | 22 |





Analysis 45.10 Average Haul of Railway Interline Traffic Originated or Terminated, in Miles - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | ALL COMMODITIES | 200 | 198 | 205 | 261 | 269 |
| | 10 | Wheat | 262 | 207 | 299 | 284 | 339 |
| | 20 | Corn | 253 | 219 | 189 | 275 | 266 |
| | 30 | Oats | 192 | 214 | 201 | 195 | 299 |
| | 40 | Barley and rye | 183 | 203 | 238 | 174 | 382 |
| | 169 | Flaxseed | 198 | 161 | 159 | 200 | 345 |
| | 163 | Sugar beets | 28 | 32 | 278 | 27 | - |
| 01 | | Bulk Grain and Beets | 234 | 220 | 230 | 242 | 281 |
| | 41 | Rice | 299 | 282 | 270 | 283 | 231 |
| | 42 | Grain, N.O.S. | 279 | 299 | 111 | 360 | 139 |
| | 50 | Flour, wheat | 284 | 287 | 196 | 304 | 304 |
| | 51 | Meal, corn | 235 | 201 | 234 | 271 | 193 |
| | 52 | Flour and meal, edible | 240 | 220 | 252 | 238 | 403 |
| | 60 | Cereal food preparations | 298 | 227 | 298 | 439 | 379 |
| | 61 | Mill products, N.O.S. | 238 | 210 | 236 | 294 | 295 |
| 02 | | Other Cereals | 265 | 249 | 216 | 295 | 312 |
| | 70 | Hay and alfalfa | 211 | 199 | 239 | 217 | 280 |
| | 71 | Straw | 131 | 128 | 197 | 124 | 190 |
| | 80 | Tobacco, leaf | 204 | 217 | 187 | 229 | 249 |
| | 90 | Cotton in bales | 228 | 160 | 269 | 212 | 245 |
| | 91 | Cotton linters, noils, etc. | 267 | 226 | 289 | 288 | 256 |
| 03 | | Cotton, Hay and Tobacco | 220 | 184 | 246 | 215 | 255 |
| | 110 | Oranges and grapefruit | 700 | 389 | 546 | 1,075 | 401 |
| | 111 | Lemons, limes, and citrus | 750 | 609 | 335 | 857 | 452 |
| | 120 | Apples, fresh | 582 | 318 | 303 | 877 | 167 |
| | 121 | Bananas | 355 | 217 | 350 | 296 | 277 |
| | 122 | Berries, fresh | 426 | 314 | 392 | 580 | 231 |
| | 125 | Cantaloupes and melons | 695 | 589 | 481 | 786 | 312 |
| | 126 | Grapes, fresh | 749 | 293 | 993 | 1,307 | 444 |
| | 127 | Peaches, fresh | 418 | 411 | 195 | 476 | 324 |
| | 128 | Watermelons | 298 | 210 | 321 | 348 | 188 |
| | 127 | Fruits, fresh, domestic | 666 | 524 | 345 | 739 | 310 |
| | 128 | Fruits, fresh, tropical | 695 | 528 | 547 | 685 | 279 |
| | 130 | Potatoes, other than sweet | 309 | 184 | 256 | 480 | 269 |
| | 140 | Cabbage | 361 | 279 | 178 | 430 | 164 |
| | 141 | Onions | 369 | 323 | 395 | 433 | 388 |
| | 142 | Tomatoes | 559 | 477 | 564 | 583 | 412 |
| | 143 | Vegetables, fresh, N.O.S. | 581 | 476 | 458 | 710 | 434 |
| 04 | | Perishables | 513 | 357 | 357 | 721 | 278 |
| | 150 | Beans and peas, dried | 452 | 236 | 304 | 746 | 400 |
| | 151 | Fruits, dried or evaporated | 582 | 313 | 401 | 661 | 399 |
| | 152 | Vegetables, dry, N.O.S. | 281 | 271 | 261 | 316 | 420 |
| | 161 | Peanuts | 256 | 214 | 210 | 344 | 273 |
| | 164 | Products of agriculture | 313 | 260 | 269 | 394 | 446 |
| | 282 | Animal products, N.O.S. | 308 | 291 | 289 | 458 | 230 |
| | 640 | Fertilizers, N.O.S. | 169 | 157 | 156 | 224 | 177 |
| 05 | | Miscellaneous Farm Products | 270 | 211 | 191 | 431 | 273 |
| | 170 | Horses, mules, ponies | 330 | 320 | 218 | 398 | 136 |
| | 180 | Cattle and calves, single-deck | 284 | 315 | 178 | 277 | 245 |
| | 181 | Calves, double-deck | 348 | 376 | 216 | 311 | 89 |
| | 190 | Sheep, goats, single-deck | 297 | 265 | 141 | 348 | 385 |
| | 191 | Sheep, goats, double-deck | 294 | 361 | 153 | 415 | 205 |
| | 200 | Hogs, single-deck | 232 | 265 | 189 | 251 | 157 |
| | 201 | Hogs, double-deck | 368 | 412 | 247 | 319 | 126 |
| | 230 | Poultry, live | 505 | 636 | 264 | 549 | 437 |
| | 260 | Wool | 378 | 216 | 205 | 581 | 575 |
| | 270 | Hides, green | 301 | 299 | 375 | 361 | 305 |
| | 281 | Animals, live, N.O.S. | 193 | 184 | 512 | 523 | - |
| 06 | | Live Animals | 284 | 348 | 216 | 303 | 290 |
| | 210 | Fresh meats, N.O.S. | 398 | 434 | 364 | 357 | 369 |
| | 220 | Meats, cured, dried, etc. | 466 | 405 | 330 | 509 | 439 |
| | 221 | Butterine and margarine | 339 | 308 | 369 | 382 | 382 |
| | 222 | Packing-house products | 375 | 409 | 311 | 358 | 444 |
| | 231 | Poultry, dressed | 448 | 486 | 298 | 405 | 386 |
| | 240 | Eggs | 484 | 461 | 284 | 548 | 518 |
| | 250 | Butter | 394 | 416 | 297 | 370 | 488 |
| | 251 | Cheese | 398 | 351 | 273 | 448 | 360 |
| 07 | | Animal Products, Edible | 464 | 430 | 334 | 388 | 418 |
| | 290 | Anthracite coal | 112 | 112 | 168 | 172 | 84 |
| | 300 | Bituminous coal | 176 | 139 | 195 | 169 | 276 |
| | 310 | Coke | 134 | 104 | 238 | 190 | 168 |
| 08 | | Coal and Coke | 166 | 132 | 195 | 166 | 275 |
| | 320 | Iron ore | 90 | 90 | 64 | 84 | 212 |
| | 330 | Copper ore concentrates | 30 | 26 | 489 | 31 | 403 |
| | 331 | Lead ore and concentrates | 34 | 26 | 489 | 31 | 403 |
| | 332 | Zinc ore and concentrates | 194 | 85 | 168 | 388 | 327 |
| | 333 | Ores and concentrates | 296 | 255 | 206 | 233 | 386 |
| | 392 | Products of mines, N.O.S. | 145 | 127 | 215 | 167 | 155 |
| 09 | | Ores | 127 | 113 | 202 | 133 | 191 |
| | 350 | Gravel and sand | 54 | 72 | 52 | 46 | 125 |
| | 351 | Stone, broken, ground, etc. | 61 | 57 | 52 | 66 | 69 |
| | 352 | Stone, rough, N.O.S. | 124 | 130 | 132 | 105 | 152 |
| | 353 | Stone, finished, N.O.S. | 286 | 245 | 174 | 187 | 284 |
| 10 | | Sand, Stone and Gravel | 67 | 65 | 63 | 54 | 113 |
| | 390 | Phosphate rock, crude, etc. | 205 | 130 | 196 | 247 | 222 |
| | 391 | Sulphur (brimstone) | 288 | 182 | 151 | 245 | 243 |
| | 661 | Sulphuric acid | 110 | 79 | 167 | 91 | 205 |
| 11 | | Sulphur and Sulphuric Acid | 175 | 109 | 185 | 223 | 154 |
| | 360 | Petroleum, crude | 284 | 151 | 311 | 312 | 105 |
| | 370 | Asphalt (natural, by-products) | 169 | 136 | 214 | 199 | 186 |
| | 450 | Petroleum oils, refined | 190 | 114 | 165 | 248 | 136 |
| | 451 | Fuel, road, and residual oils | 124 | 85 | 157 | 145 | 124 |
| | 458 | Lubricating oils, etc. | 336 | 176 | 267 | 333 | 226 |
| | 453 | Petroleum products | 286 | 180 | 378 | 301 | 165 |
| 12 | | Petroleum and Products | 194 | 119 | 176 | 252 | 118 |
| | 400 | Logs | 80 | 103 | 77 | 42 | 127 |
| | 401 | Posts, poles, and piling | 256 | 173 | 270 | 300 | 283 |
| | 402 | Wood (fuel) | 77 | 66 | 60 | 84 | 236 |
| | 410 | Ties, railroad | 198 | 187 | 163 | 230 | 158 |
| | 420 | Pulpwood | 114 | 123 | 95 | 120 | 95 |
| | 430 | Lumber, shingles, and lath | 322 | 208 | 243 | 471 | 246 |
| | 431 | Box, crate, and cooperage | 293 | 236 | 257 | 349 | 257 |
| | 432 | Veneer and built-up wood | 447 | 317 | 267 | 1,053 | 359 |
| | 462 | Crude rubber (unreclaimed) | 284 | 282 | 162 | 398 | 633 |
| | 463 | Products of forests, N.O.S. | 214 | 192 | 180 | 270 | 138 |
| 13 | | Forest Products | 277 | 202 | 229 | 367 | 199 |
| | 100 | Cottonseed | 81 | 227 | 66 | 94 | 252 |
| | 101 | Cottonseed meal and cake | 284 | 356 | 323 | 222 | 254 |
| | 160 | Vegetable - oil cake, etc. | 233 | 233 | 208 | 205 | 569 |
| | 460 | Cottonseed oil | 270 | 251 | 269 | 295 | 376 |
| | 461 | Linseed oil | 263 | 147 | 524 | 450 | 281 |
| | 462 | Vegetable oils, N.O.S. | 499 | 271 | 464 | 707 | 231 |
| 280 | | Fish or sea-animal oil | 140 | 227 | 138 | 1,281 | 535 |
| | | Oils - Vegetable and Animal | 264 | 268 | 216 | 295 | 351 |
| | 490 | Iron, pig | 141 | 112 | 214 | 172 | 152 |
| | 491 | Iron and steel, 6th class | 87 | 104 | 26 | 41 | 190 |
| | 500 | Rails, fastenings, etc. | 154 | 138 | 214 | 159 | 185 |
| | 510 | Cast-iron pipe and fittings | 299 | 176 | 270 | 353 | 283 |
| | 511 | Iron and steel pipe, fittings | 226 | 217 | 243 | 242 | 205 |
| | 512 | Iron and steel: Rails, wire | 172 | 172 | 206 | 290 | 211 |
| | 513 | Iron and steel, 5th class | 176 | 161 | 202 | 218 | 232 |
| | 583 | Railway car wheels, axles | 178 | 158 | 188 | 231 | 167 |
| | 692 | Furnace slag | 87 | 41 | 152 | 160 | 75 |
| | 693 | Scrap iron and scrap steel | 114 | 110 | 147 | 122 | 150 |
| 15 | | Iron and Steel | 166 | 148 | 195 | 215 | 206 |
| | 520 | Copper: Ingot, matte, pig | 186 | 179 | 346 | 189 | 375 |
| | 521 | Copper, brass and bronze | 186 | 186 | 181 | 187 | 180 |
| | 522 | Lead and zinc: Ingot, bar | 412 | 252 | 151 | 585 | 386 |
| | 523 | Aluminum: Ingot, pig, slab | 246 | 261 | 213 | 158 | 400 |
| 16 | | All Other Metals | 304 | 224 | 174 | 528 | 380 |
| | 530 | Machinery and boilers | 252 | 225 | 267 | 322 | 230 |
| | 580 | Agricultural implements, etc. | 294 | 271 | 253 | 328 | 288 |
| | 581 | Vehicles, horse-drawn, etc. | 268 | 283 | 268 | 253 | 287 |
| | 582 | Tractors and parts | 329 | 250 | 212 | 415 | 244 |
| | 590 | Automobiles (passenger) | 312 | 246 | 238 | 511 | 403 |
| | 591 | Autotrucks | 382 | 301 | 250 | 653 | 331 |
| | 592 | Automobiles, K.D. and parts | 295 | 197 | 248 | 589 | 463 |
| | 593 | Automobile tires | 328 | 284 | 290 | 350 | 390 |
| | 610 | Furniture, metal | 273 | 236 | 268 | 338 | 299 |
| | 611 | Furniture, not metal | 295 | 244 | 299 | 376 | 339 |
| | 697 | Building woodwork | 581 | 379 | 290 | 776 | 300 |
| 17 | | Appliances | 289 | 227 | 264 | 468 | 337 |
| | 540 | Cement, building | 99 | 85 | 139 | 106 | 116 |
| | 550 | Brick, common | 110 | 113 | 104 | 120 | 75 |
| | 551 | Brick and building tile | 176 | 179 | 158 | 173 | 177 |
| | 552 | Artificial stone, N.O.S. | 169 | 170 | 171 | 170 | 123 |
| | 560 | Lime, common, quick, slaked | 174 | 192 | 169 | 146 | 150 |
| | 561 | Plaster, stucco, etc. | 227 | 168 | 220 | 309 | 178 |
| 18 | | Building Material | 121 | 113 | 111 | 126 | 136 |
| | 580 | Salt | 212 | 196 | 262 | 220 | 207 |
| | 470 | Sugar (beet or cane) | 350 | 254 | 241 | 419 | 376 |
| | 471 | Table syrups and molasses | 368 | 318 | 405 | 402 | 480 |
| | 472 | Molasses, blackstrap, etc. | 239 | 196 | 412 | 225 | 518 |
| | 620 | Beverages | 275 | 251 | 343 | 298 | 416 |
| | 630 | Ice | 47 | 43 | 50 | 60 | 195 |
| | 680 | Canned food products | 327 | 269 | 267 | 431 | 326 |
| | | Manufactured Food | 289 | 235 | 267 | 347 | 306 |
| | 650 | Newsprint paper | 285 | 178 | 284 | 418 | 233 |
| | 651 | Printing paper, N.O.S. | 211 | 188 | 259 | 311 | 234 |
| | 694 | Paper bags, wrapping paper | 239 | 191 | 233 | 336 | 248 |
| | 695 | Paperboard, wallboard | 203 | 170 | 263 | 264 | 207 |
| | 696 | Building paper and roofing | 198 | 161 | 252 | 242 | 252 |
| 20 | | Paper and Products | 215 | 178 | 249 | 326 | 229 |
| | 640 | Rosin | 231 | 151 | 266 | 278 | 368 |
| | 641 | Turpentine | 353 | 207 | 435 | 504 | 345 |
| | 660 | Alcohol, denatured or wood | 257 | 205 | 230 | 349 | 311 |
| | 662 | Explosives, N.O.S. | 198 | 148 | 188 | 274 | 261 |
| | 691 | Paints in oil and varnishes | 256 | 210 | 271 | 292 | 265 |
| | | Chemicals | 240 | 187 | 280 | 332 | 295 |
| | 271 | Leather | 282 | 238 | 298 | 330 | 283 |
| | 670 | Cotton cloth and fabrics | 233 | 196 | 281 | 353 | 278 |
| | 671 | Bagging and bags | 309 | 282 | 304 | 318 | 457 |
| | | Textiles and Leather | 284 | 204 | 290 | 308 | 319 |
| | 570 | Sewer pipe and draintile | 175 | 196 | 154 | 189 | 199 |
| | 699 | Glass, flat, not plate | 295 | 244 | 207 | 360 | 378 |
| | 700 | Glass: Bottles, jars, etc. | 229 | 211 | 226 | 224 | 267 |
| 23 | | Glass and Tile | 224 | 210 | 192 | 262 | 277 |
| | 690 | Tobacco, manufactured | 147 | 249 | 131 | 265 | 143 |
| | 698 | Soap and washing compounds | 246 | 196 | 261 | 346 | 327 |
| | 701 | Manufactures, miscellaneous | 258 | 210 | 276 | 337 | 245 |
| 24 | | Miscellaneous | 240 | 209 | 241 | 343 | 251 |

Analysis 45.11 Average Revenue or Railway Interline Traffic Originated or Terminated, per Ton Mile - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | | $ | $ | $ | $ | $ |
| | | ALL COMMODITIES | .0102 | .0108 | .0110 | .0111 | .0060 |
| | 10 | Wheat | .0080 | .0082 | .0102 | .0075 | .0073 |
| | 20 | Corn | .0078 | .0068 | .0110 | .0081 | .0100 |
| | 30 | Oats | .0090 | .0082 | .0102 | .0105 | .0075 |
| | 40 | Barley and rye | .0092 | .0101 | .0106 | .0089 | .0069 |
| | 162 | Flaxseed | .0100 | .0130 | .0082 | .0099 | .0152 |
| | 163 | Sugar beets | .0163 | .0184 | .0128 | .0158 | - |
| 01 | | Bulk Grain and Beets | .0081 | .0077 | .0104 | .0080 | .0078 |
| | 41 | Rice | .0122 | .0112 | .0103 | .0129 | .0128 |
| | 42 | Grain, N.O.S. | .0090 | .0087 | .0070 | .0098 | .0064 |
| | 50 | Flour, wheat | .0067 | .0074 | .0119 | .0053 | .0086 |
| | 51 | Meal, corn | .0060 | .0065 | .0066 | .0050 | .0105 |
| | 52 | Flour and meal, edible | .0076 | .0075 | .0099 | .0066 | .0061 |
| | 60 | Cereal food preparations | .0101 | .0114 | .0103 | .0088 | .0072 |
| | 61 | Mill products, N.O.S. | .0068 | .0079 | .0087 | .0051 | .0070 |
| 02 | | Other Cereals | .0071 | .0079 | .0105 | .0057 | .0080 |
| | 70 | Hay and alfalfa | .0139 | .0146 | .0134 | .0130 | .0135 |
| | 71 | Straw | .0172 | .0184 | .0135 | .0134 | .0[illegible] |
| | 80 | Tobacco, leaf | .0206 | .0211 | .0227 | .0227 | .0157 |
| | 90 | Cotton in bales | .0179 | .0183 | .0138 | .0208 | .0185 |
| | 91 | Cotton linters, noils | .0117 | .0117 | .0119 | .0120 | .0092 |
| 03 | | Cotton, Hay and Tobacco | .0165 | .0155 | .0153 | .0181 | .0142 |
| | 110 | Oranges and grapefruit | .0138 | .0117 | .0190 | .0128 | .0190 |
| | 111 | Lemons, limes, and citrus | .0118 | .0101 | .0112 | .0124 | .0226 |
| | 120 | Apples, fresh | .0128 | .0120 | .0134 | .0129 | .0182 |
| | 121 | Bananas | .0208 | .0246 | .0174 | .0257 | .0273 |
| | 122 | Berries, fresh | .0247 | .0255 | .0211 | .0179 | .0220 |
| | 123 | Cantaloupes and melons | .0143 | .0114 | .0134 | .0162 | .0249 |
| | 124 | Grapes, fresh | .0132 | .0128 | .0149 | .0132 | .0266 |
| | 125 | Peaches, fresh | .0180 | .0144 | .0204 | .0183 | .0194 |
| | 126 | Watermelons | .0190 | .0162 | .0141 | .0157 | .0161 |
| | 127 | Fruits, fresh, domestic | .0136 | .0111 | .0162 | .0148 | .0167 |
| | 128 | Fruits, fresh, tropical | .0121 | .0114 | .0107 | .0105 | .0149 |
| | 130 | Potatoes, other than sweet | .0128 | .0162 | .0158 | .0107 | .0144 |
| | 140 | Cabbage | .0154 | .0145 | .0175 | .0151 | .0234 |
| | 141 | Onions | .0130 | .0128 | .0136 | .0102 | .0131 |
| | 142 | Tomatoes | .0151 | .0128 | .0173 | .0150 | .0181 |
| | 143 | Vegetables, fresh, N.O.S. | .0152 | .0129 | .0235 | .0150 | .0201 |
| 04 | | Perishables | .0140 | .0133 | .0144 | .0133 | .0181 |
| | 150 | Beans and peas, dried | .0104 | .0118 | .0169 | .0094 | .0120 |
| | 151 | Fruits, dried or evaporated | .0113 | .0131 | .0098 | .0111 | .0012 |
| | 152 | Vegetables, dry, N.O.S. | .0151 | .0137 | .0215 | .0119 | .0136 |
| | 161 | Peanuts | .0162 | .0173 | .0181 | .0148 | .0136 |
| | 164 | Products of Agriculture | .0116 | .0114 | .0116 | .0120 | .0085 |
| | 288 | Animal products, N.O.S. | .0158 | .0168 | .0185 | .0145 | .0161 |
| | 640 | Fertilizers, N.O.S. | .0106 | .0113 | .0110 | .0090 | .0088 |
| 05 | | Miscellaneous Farm Products | .0119 | .0125 | .0126 | .0113 | .0103 |
| | 170 | Horses, mules, ponies | .0200 | .0294 | .0217 | .0168 | .0178 |
| | 180 | Cattle and calves, single-deck | .0146 | .0117 | .0202 | .0149 | .0158 |
| | 181 | Calves, double-deck | .0130 | .0128 | .0160 | .0158 | .0128 |
| | 190 | Sheep and goats, single-deck | .0147 | .0150 | .0239 | .0140 | .0116 |
| | 191 | Sheep and goats, double-deck | .0133 | .0125 | .0182 | .0135 | .0180 |
| | 200 | Hogs, single-deck | .0165 | .0143 | .0218 | .0168 | .0213 |
| | 201 | Hogs, double-deck | .0126 | .0116 | .0192 | .0112 | .0177 |
| | 230 | Poultry, live | .0223 | .0199 | .0307 | .0281 | .0201 |
| | 260 | Wool | .0205 | .0231 | .0337 | .0224 | .0132 |
| | 270 | Hides, green | .0116 | .0151 | .0151 | .0138 | .0130 |
| | 281 | Animals, live, N.O.S. | .0209 | .0207 | .0117 | .0294 | - |
| 06 | | Live Animals | .0149 | .0140 | .0202 | .0153 | .0157 |
| | 210 | Fresh meats, N.O.S. | .0170 | .0175 | .0195 | .0158 | .0201 |
| | 220 | Meats, cured dried | .0155 | .0131 | .0182 | .0163 | .0144 |
| | 221 | Butterine and margarine | .0211 | .0231 | .0306 | .0193 | .0118 |
| | 222 | Packing-house products | .0145 | .0119 | .0176 | .0161 | .0135 |
| | 231 | Poultry, dressed | .0218 | .0213 | .0275 | .0221 | .0288 |
| | 240 | Eggs | .0192 | .0202 | .0273 | .0175 | .0219 |
| | 250 | Butter | .0216 | .0226 | .0272 | .0195 | .0221 |
| | 251 | Cheese | .0214 | .0188 | .0269 | .0214 | .0172 |
| 07 | | Animal Products, Edible | .0176 | .0176 | .0198 | .0172 | .0170 |
| | 290 | Anthracite coal | .0116 | .0116 | .0073 | .0108 | .0118 |
| | 300 | Bituminous coal | .0065 | .0072 | .0058 | .0080 | .0052 |
| | 310 | Coke | .0087 | .0115 | .0076 | .0083 | .0092 |
| 08 | | Coal and Coke | .0070 | .0081 | .0059 | .0081 | .0052 |
| | 320 | Iron and ore | .0078 | .0076 | .0067 | .0087 | .0047 |
| | 330 | Copper ore concentrates | .0072 | .0071 | .0111 | .0068 | - |
| | 331 | Lead ore and concentrates | .0161 | .0133 | .0096 | .0184 | .0069 |
| | 332 | Zinc ore and concentrates | .0066 | .0073 | .0084 | .0061 | .0051 |
| | 333 | Ores and concentrates, N.O.S. | .0070 | .0067 | .0077 | .0075 | .0035 |
| | 392 | Products of mines, N.O.S. | .0082 | .0089 | .0074 | .0078 | .0068 |
| 09 | | Ores | .0079 | .0081 | .0074 | .0078 | .0069 |
| | 350 | Gravel, sand etc. | .0100 | .0092 | .0100 | .0107 | .0060 |
| | 351 | Stone, broken, ground, etc. | .0095 | .0110 | .0088 | .0089 | .0090 |
| | 352 | Stone, rough, N.O.S. | .0102 | .0116 | .0072 | .0094 | .0102 |
| | 353 | Stone, finished, N.O.S. | .0106 | .0105 | .0117 | .0116 | .0095 |
| 10 | | Sand, Stone and Gravel | .0099 | .0105 | .0093 | .0101 | .0073 |
| | 390 | Phosphate rock, crude, etc. | .0086 | .0109 | .0092 | .0058 | .0053 |
| | 391 | Sulphur (brimstone) | .0087 | .0111 | .0118 | .0079 | .0117 |
| | 661 | Sulphuric acid | .0148 | .0200 | .0103 | .0184 | .0127 |
| 11 | | Sulphur and Sulphuric Acid | .0102 | .0153 | .0097 | .0085 | .0112 |
| | 360 | Petroleum, crude | .0069 | .0107 | .0064 | .0065 | .0127 |
| | 370 | Asphalt (natural) etc. | .0116 | .0125 | .0102 | .0114 | .0104 |
| | 450 | Petroleum oils, refined | .0142 | .0182 | .0177 | .0128 | .0169 |
| | 451 | Fuel, road, residual oils | .0112 | .0180 | .0134 | .0096 | .0128 |
| | 452 | Lubricating oils and greases | .0127 | .0142 | .0129 | .0113 | .0143 |
| | 453 | Petroleum products, N.O.S. | .0125 | .0138 | .0120 | .0111 | .0160 |
| 12 | | Petroleum and Products | .0133 | .0170 | .0163 | .0116 | .0153 |
| | | Logs | .0105 | .0138 | .0108 | .0099 | .0114 |
| | 401 | Posts, poles, and piling | .0097 | .0011 | .0095 | .0094 | .0076 |
| | 402 | Wood (fuel) | .0100 | .0116 | .0101 | .0092 | .0099 |
| | 410 | Ties, railroad | .0093 | .0078 | .0122 | .00[illegible]8 | .0138 |
| | 420 | Pulpwood | .0084 | .0104 | .0075 | .0072 | .0095 |
| | 430 | Lumber, shingles, and lath | .0085 | .0102 | .0089 | .0077 | .0100 |
| | 431 | Box, crate, and cooperage | .0112 | .0099 | .0154 | .0097 | .0096 |
| | 432 | Veneer and built-up wood | .0073 | .0092 | .0108 | .0084 | .0101 |
| | 442 | Crude rubber (unreclaimed) | .0128 | .0012 | .0184 | .0141 | .0093 |
| | 443 | Products of forests, N.O.S. | .0124 | .0012 | .0115 | .0118 | .0153 |
| | | Forest Products | .0090 | .0105 | .0098 | .0081 | .0100 |
| | | Cottonseed | .0190 | .0119 | .0212 | .0177 | .0180 |
| | 101 | Cottonseed meal and cake | .0087 | .0070 | .0083 | .0098 | .0076 |
| | 160 | Vegetable - oil cake, etc. | .0083 | .0090 | .0090 | .0076 | .0097 |
| | 450 | Cottonseed oil | .0114 | .0094 | .0118 | .0120 | .0077 |
| | 461 | Linseed oil | .0121 | .0177 | .0088 | .0094 | .0118 |
| | 462 | Vegetable oils, N.O.S. | .0066 | .0095 | .0054 | .0059 | .0102 |
| | 280 | Fish or sea-animal oil | .0079 | .0099 | .0220 | .0055 | .0066 |
| | | Oils - Vegetable and Animal | .0094 | .0098 | .0105 | .0094 | .0066 |
| | 490 | Iron, pig | .0090 | .0108 | .0069 | .0073 | .0084 |
| | 491 | Iron and steel, 6th Class | .0132 | .0132 | .0168 | .0124 | .0131 |
| | 500 | Nails, fastenings, frogs | .0127 | .0157 | .0109 | .0110 | .0131 |
| | 510 | Cast-iron pipe and fittings | .0127 | .0118 | .0109 | .0126 | .0115 |
| | 511 | Iron and steel pipe, fittings | .0161 | .0137 | .0118 | .0188 | .0118 |
| | 512 | Iron and steel: Nails, wire | .0151 | .0147 | .0160 | .0156 | .0129 |
| | 513 | Iron and steel, 5th Class | .0143 | .0145 | .0150 | .0139 | .0129 |
| | 583 | Railway car wheels, axles | .0151 | .0155 | .0155 | .0142 | .0158 |
| | 692 | Furnace slag | .0075 | .0120 | .0056 | .0068 | .0813 |
| | 693 | Scrap iron and scrap steel | .0115 | .0120 | .0096 | .0098 | .0108 |
| | | Iron and Steel | .0137 | .0139 | .0107 | .0147 | .0125 |
| | 520 | Copper: Ingot, matte, pig | .0084 | .0116 | .0154 | .0070 | .0107 |
| | 521 | Copper, brass, and bronze | .0160 | .0176 | .0270 | .0132 | .0118 |
| | 522 | Lead and zinc: Ingot, Bar | .0175 | .0074 | .0094 | .0057 | .0060 |
| | 523 | Aluminum: Ingot, pig, slab | .0171 | .0168 | .0166 | .0226 | .0170 |
| | | All Other Metals | .0074 | .0097 | .0113 | .0063 | .0064 |
| | 530 | Machinery and boilers | .0185 | .0154 | .0209 | .0239 | .0163 |
| | 580 | Agricultural implements, etc. | .0175 | .0138 | .0181 | .0206 | .0144 |
| | 581 | Vehicles, horse-drawn, etc. | .0209 | .0163 | .0239 | .0258 | .0121 |
| | 582 | Tractors and parts | .0171 | .0149 | .0251 | .0176 | .0155 |
| | 590 | Automobiles (passenger) | .0102 | .0373 | .0546 | .0427 | .0308 |
| | 591 | Autotrucks | .0179 | .0255 | .0146 | .0221 | .0366 |
| | 592 | Automobiles, K.D. and parts | .0179 | .0178 | .0208 | .0179 | .0136 |
| | 593 | Automobile tires | .0201 | .0184 | .0270 | .0215 | .0153 |
| | 610 | Furniture, metal | .0215 | .0227 | .0218 | .0195 | .0192 |
| | 611 | Furniture, not metal | .0265 | .0258 | .0288 | .0244 | .0269 |
| | 697 | Building woodwork (millwork) | .0076 | .0095 | .0121 | .0067 | .0150 |
| | | Appliances | .0226 | .0215 | .0274 | .0233 | .0231 |
| | 540 | Cement, building | .0150 | .0150 | .0097 | .0134 | .0109 |
| | 550 | Brick, common | .0104 | .0110 | .0091 | .0103 | .0151 |
| | 551 | Brick, and building tile | .0068 | .0088 | .0091 | .0088 | .0078 |
| | 552 | Artificial stone, N.O.S. | .0111 | .0107 | .0121 | .0126 | .0185 |
| | 560 | Lime, common (quick slaked) | .0095 | .0088 | .0090 | .0117 | .0094 |
| | 561 | Plaster (stucco wall) etc. | .0094 | .0113 | .0102 | .0079 | .0098 |
| | 18 | Building Material | .0116 | .0122 | .0096 | .0119 | .0062 |
| | 580 | Salt | .0102 | .0093 | .0097 | .0111 | .0106 |
| | 470 | Sugar (beet or cane) | .0109 | .0115 | .0126 | .0106 | .0101 |
| | 471 | Table syrups and molasses | .0092 | .0101 | .0088 | .0089 | .0092 |
| | 472 | Molasses, blackstrap, etc. | .0092 | .0114 | .0067 | .0091 | .0067 |
| | 620 | Beverages | .0141 | .0147 | .0110 | .0137 | .0115 |
| | 630 | Ice | .0189 | .0195 | .0198 | .0169 | .0140 |
| | 680 | Canned food products | .0126 | .0129 | .0154 | .0119 | .0130 |
| | | Manufactured Food | .0115 | .0116 | .0117 | .0110 | .0107 |
| | 650 | Newsprint paper | .0112 | .0128 | .0103 | .0082 | .0123 |
| | 651 | Printing paper, N.O.S. | .0121 | .0128 | .0136 | .0112 | .0100 |
| | 654 | Paper bags and wrapping paper | .0096 | .0136 | .0109 | .0080 | .0104 |
| | 655 | Paperboard, wallboard | .0120 | .0130 | .0103 | .0112 | .0116 |
| | 696 | Building paper and roofing | .0135 | .0134 | .0145 | .0133 | .0115 |
| | | Paper and Products | .0121 | .0130 | .0120 | .0105 | .0111 |
| | 140 | Rosin | .0101 | .0116 | .0098 | .0089 | .0090 |
| | 441 | Turpentine | .0121 | .0121 | .0126 | .0123 | .0106 |
| | 660 | Alcohol, denatured or wood | .0138 | .0150 | .0163 | .0119 | .0134 |
| | 662 | Explosives, N.O.S. | .0116 | .0372 | .0540 | .0160 | .0399 |
| | 691 | Paints, oil and varnishes | .0114 | .0143 | .0167 | .0110 | .0133 |
| | | Chemicals | .0176 | .0175 | .0128 | .0204 | .0175 |
| | 271 | Leather | .0163 | .0159 | .0174 | .0201 | .0151 |
| | 670 | Cotton cloth and fabrics | .0221 | .0313 | .0213 | .0191 | .0208 |
| | 671 | Bagging and bags | .0112 | .0134 | .0139 | .0148 | .0110 |
| | | Textiles and Leather | .0184 | .0187 | .0195 | .0161 | .0157 |
| | 570 | Sewer pipe and draintile | .0125 | .0118 | .0133 | .0145 | .0139 |
| | 699 | Glass, flat, not plate | .0128 | .0148 | .0207 | .0120 | .0097 |
| | 700 | Glass: Bottles, jars, etc. | .0141 | .0133 | .0195 | .0154 | .0133 |
| | | Glass and Tile | .0135 | .0130 | .0173 | .0116 | .0122 |
| | 690 | Tobacco, manufactured | .0198 | .0237 | .0239 | .0152 | .0225 |
| | 698 | Soap and washing compounds | .0146 | .0146 | .0136 | .0158 | .0119 |
| | 701 | Manufactures miscellaneous | .0139 | .0135 | .0155 | .0116 | .0116 |
| | | Miscellaneous | .0140 | .0136 | .0157 | .0146 | .0122 |



Analysis 45.12 Average Revenue of Railway Interline Traffic Originated or Terminated, per Loaded Car Mile - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | | $ | $ | $ | $ | $ |
| | | ALL COMMODITIES | .29 | .31 | .29 | .26 | .29 |
| | 10 | Wheat | .35 | .34 | .44 | .34 | .29 |
| | 20 | Corn | .35 | .41 | .39 | .31 | .35 |
| | 30 | Oats | .28 | .26 | .25 | .33 | .22 |
| | 40 | Barley and rye | .35 | .33 | .31 | .36 | .21 |
| | 162 | Flaxseed | .39 | .57 | .21 | .39 | .28 |
| | 163 | Sugar beets | .61 | .68 | .26 | .59 | - |
| 01 | | Bulk Grain and Beets | .34 | .34 | .38 | .33 | .29 |
| | 41 | Rice | .28 | .26 | .22 | .30 | .29 |
| | 42 | Grain, N.O.S. | .23 | .21 | .16 | .29 | .18 |
| | 50 | Flour, wheat | .16 | .19 | .22 | .13 | .19 |
| | 51 | Meal, corn | .13 | .15 | .11 | .12 | .20 |
| | 52 | Flour and meal | .17 | .18 | .16 | .18 | .10 |
| | 60 | Cereal food preparations | .18 | .19 | .22 | .17 | .14 |
| | 61 | Mill products, N.O.S. | .15 | .17 | .15 | .12 | .15 |
| 02 | | Other Cereals | .16 | .19 | .19 | .14 | .17 |
| | 70 | Hay and alfalfa | .17 | .17 | .16 | .17 | .16 |
| | 71 | Straw | .22 | .23 | .17 | .19 | .27 |
| | 80 | Tobacco, leaf | .22 | .26 | .24 | .32 | .16 |
| | 90 | Cotton in bales | .25 | .28 | .23 | .27 | .18 |
| | 91 | Cotton linters, noils | .23 | .22 | .23 | .25 | .18 |
| 03 | | Cotton, Hay and Tobacco | .22 | .19 | .22 | .24 | .16 |
| | 110 | Oranges and grapefruit | .24 | .20 | .32 | .22 | .33 |
| | 111 | Lemons, limes, and citrus | .17 | .15 | .17 | .18 | .35 |
| | 120 | Apples, fresh | .22 | .19 | .21 | .25 | .25 |
| | 121 | Bananas | .22 | .26 | .18 | .28 | .28 |
| | 122 | Berries, fresh | .33 | .28 | .49 | .27 | .35 |
| | 123 | Cantaloupes and melons | .16 | .12 | .15 | .18 | .31 |
| | 124 | Grapes, fresh | .18 | .16 | .20 | .18 | .37 |
| | 125 | Peaches, fresh | .22 | .16 | .35 | .24 | .21 |
| | 126 | Watermelons | .20 | .22 | .19 | .20 | .25 |
| | 127 | Fruits, fresh, domestic | .19 | .15 | .21 | .21 | .23 |
| | 128 | Fruits, fresh, tropical | .15 | .20 | .13 | .16 | .18 |
| | 130 | Potatoes, other than sweet | .23 | .30 | .28 | .18 | .24 |
| | 140 | Cabbage | .20 | .18 | .22 | .20 | .31 |
| | 141 | Onions | .17 | .16 | .18 | .16 | .16 |
| | 142 | Tomatoes | .16 | .13 | .18 | .16 | .24 |
| | 143 | Vegetables, fresh, N.O.S. | .17 | .11 | .27 | .17 | .25 |
| 04 | | Perishables | .20 | .18 | .25 | .20 | .26 |
| | 150 | Beans and peas, dried | .30 | .29 | .46 | .28 | .32 |
| | 151 | Fruits, dried or evaporated | .37 | .32 | .32 | .37 | .22 |
| | 152 | Vegetables, dry, N.O.S. | .21 | .19 | .31 | .22 | .17 |
| | 161 | Peanuts | .25 | .27 | .26 | .23 | .21 |
| | 164 | Products of agriculture | .24 | .24 | .25 | .25 | .17 |
| | 288 | Animal products, N.O.S. | .30 | .31 | .28 | .30 | .32 |
| | 640 | Fertilizers, N.O.S. | .30 | .30 | .30 | .28 | .23 |
| 05 | | Miscellaneous Farm Products | .28 | .27 | .29 | .28 | .22 |
| | 170 | Horses, mules, ponies | .24 | .34 | .30 | .20 | .54 |
| | 180 | Cattle and calves, single-deck | .16 | .16 | .23 | .16 | .18 |
| | 181 | Calves, double-deck | .16 | .16 | .18 | .16 | .52 |
| | 190 | Sheep and goats, single-deck | .11 | .12 | .20 | .10 | .10 |
| | 191 | Sheep and goats, double-deck | .13 | .12 | .20 | .13 | .17 |
| | 200 | Hogs, single-deck | .15 | .14 | .16 | .14 | .17 |
| | 201 | Hogs, double-deck | .15 | .14 | .25 | .14 | .21 |
| | 230 | Poultry, live | .20 | .18 | .32 | .26 | .24 |
| | 260 | Wool | .33 | .30 | .33 | .36 | .22 |
| | 270 | Hides, green | .33 | .29 | .32 | .32 | .33 |
| | 281 | Animals, live, N.O.S. | .33 | .31 | .27 | .41 | - |
| 06 | | Live Animals | .17 | .17 | .24 | .17 | .18 |
| | 210 | Fresh meats, N.O.S. | .20 | .20 | .25 | .19 | .27 |
| | 220 | Meats, cured, dried | .24 | .20 | .25 | .27 | .22 |
| | 221 | Butterine and margarine | .31 | .28 | .38 | .28 | .34 |
| | 222 | Packing-house products | .25 | .22 | .29 | .28 | .22 |
| | 231 | Poultry, dressed | .25 | .24 | .33 | .26 | .30 |
| | 240 | Eggs | .23 | .24 | .27 | .21 | .23 |
| | 250 | Butter | .26 | .28 | .35 | .24 | .27 |
| | 251 | Cheese | .30 | .26 | .35 | .26 | .23 |
| 07 | | Animal Products, Edible | .23 | .22 | .27 | .23 | .24 |
| | 290 | Anthracite coal | .53 | .54 | .27 | .32 | .58 |
| | 300 | Bituminous coal | .34 | .38 | .29 | .34 | .30 |
| | 310 | Coke | .30 | .35 | .24 | .26 | .28 |
| 08 | | Coal and Coke | .36 | .41 | .29 | .34 | .30 |
| | 320 | Iron ore | .49 | .48 | .39 | .53 | .34 |
| | 330 | Copper ore concentrates | .36 | .22 | .68 | .39 | - |
| | 331 | Lead ore and concentrates | .81 | .62 | .28 | .95 | .31 |
| | 332 | Zinc ore and concentrates | .32 | .34 | .41 | .31 | .29 |
| | 333 | Ores and concentrates | .33 | .32 | .38 | .35 | .19 |
| | 392 | Products of mines, N.O.S. | .34 | .37 | .26 | .32 | .39 |
| 09 | | Ores | .36 | .38 | .28 | .37 | .35 |
| | 350 | Gravel, sand, etc. | .52 | .48 | .51 | .57 | .33 |
| | 351 | Stone, broken, ground, etc. | .49 | .55 | .46 | .46 | .45 |
| | 352 | Stone, rough, N.O.S. | .38 | .42 | .27 | .38 | .30 |
| | 353 | Stone, finished, N.O.S. | .32 | .32 | .27 | .36 | .26 |
| 10 | | Sand, Stone and Gravel | .46 | .43 | .43 | .50 | .34 |
| | 390 | Phosphate rock, crude, etc. | .36 | .41 | .35 | .35 | .26 |
| | 391 | Sulphur (brimstone) | .37 | .41 | .46 | .35 | .57 |
| | 661 | Sulphuric acid | .70 | .87 | .92 | .63 | .70 |
| 11 | | Sulphur and Sulphuric Acid | .41 | .62 | .40 | .39 | .58 |
| | 360 | Petroleum, crude | .23 | .34 | .20 | .22 | .49 |
| | 370 | Asphalt (natural) etc. | .39 | .41 | .34 | .40 | .36 |
| | 450 | Petroleum oils, refined | .38 | .49 | .48 | .33 | .45 |
| | 451 | Fuel, road, residual oils | .36 | .53 | .42 | .31 | .39 |
| | 452 | Lubricating oils and greases | .27 | .31 | .27 | .24 | .28 |
| | 453 | Petroleum products, N.O.S. | .30 | .34 | .31 | .25 | .41 |
| 12 | | Petroleum and Products | .36 | .46 | .45 | .32 | .42 |
| | | Logs | .30 | .41 | .28 | .30 | .31 |
| | 401 | Posts, poles, and piling | .26 | .34 | .26 | .23 | .27 |
| | 402 | Wood (fuel) | .28 | .33 | .32 | .26 | .25 |
| | 410 | Ties, railroad | .30 | .44 | .36 | .32 | .44 |
| | 420 | Pulpwood | .26 | .29 | .22 | .25 | .29 |
| | 430 | Lumber, shingles, and lath | .21 | .24 | .21 | .19 | .26 |
| | 431 | Box, crate, and cooperage | .25 | .22 | .33 | .23 | .22 |
| | 432 | Veneer and built-up wood | .18 | .20 | .24 | .16 | .23 |
| | 442 | Crude rubber (unreclaimed) | .47 | .47 | .54 | .43 | .41 |
| | 443 | Products of forests, N.O.S. | .22 | .21 | .22 | .21 | .28 |
| | | Forest Products | .22 | .23 | .23 | .20 | .27 |
| | | Cottonseed | .50 | .35 | .51 | .50 | .24 |
| | 101 | Cottonseed meal and cake | .21 | .20 | .19 | .24 | .17 |
| | 160 | Vegetable - oil cake, etc. | .20 | .23 | .19 | .16 | .13 |
| | 450 | Cottonseed oil | .33 | .24 | .35 | .35 | .23 |
| | 461 | Linseed oil | .32 | .44 | .24 | .24 | .27 |
| | 462 | Vegetable oils, N.O.S. | .19 | .27 | .16 | .17 | .27 |
| | 280 | Fish or sea-animal oil | .23 | .28 | .62 | .17 | .28 |
| | | Oils - Vegetable and Animal | .25 | .25 | .27 | .24 | .19 |
| | 490 | Iron, pig | .47 | .53 | .39 | .40 | .42 |
| | 491 | Iron and steel, 6th Class | .61 | .61 | .80 | .52 | .42 |
| | 500 | Nails, fastenings, etc. | .40 | .39 | .35 | .43 | .50 |
| | 510 | Cast-iron pipe and fittings | .50 | .52 | .26 | .34 | .21 |
| | 511 | Iron and steel pipe fittings | .56 | .56 | .35 | .62 | .34 |
| | 512 | Iron and steel: Nails, wire | .37 | .34 | .36 | .41 | .31 |
| | 513 | Iron and steel, 5th Class | .39 | .38 | .38 | .47 | .36 |
| | 583 | Railway car wheels, axles | .39 | .33 | .50 | .52 | .43 |
| | 692 | Furnace slag | .39 | .59 | .30 | .34 | 1.54 |
| | 693 | Scrap iron and scrap steel | .46 | .46 | .36 | .41 | .42 |
| | | Iron and Steel | .40 | .39 | .34 | .49 | .36 |
| | 520 | Copper: Ingot, matte, pig | .35 | .39 | .32 | .31 | .33 |
| | 521 | Copper, brass, and bronze | .43 | .39 | .40 | .55 | .34 |
| | 522 | Lead and zinc: Ingot, Bar | .28 | .29 | .37 | .27 | .28 |
| | 523 | Aluminum: Ingot, pig, slab | .46 | .45 | .40 | .55 | .10 |
| | | All Other Metals | .31 | .34 | .44 | .29 | .28 |
| | 530 | Machinery and boilers | .30 | .28 | .36 | .42 | .25 |
| | 580 | Agricultural implements, etc. | .27 | .21 | .30 | .31 | .22 |
| | 581 | Vehicles, horse-drawn, etc. | .27 | .20 | .33 | .33 | .20 |
| | 582 | Tractors and parts | .28 | .22 | .33 | .30 | .20 |
| | 590 | Automobiles (passenger) | .23 | .22 | .31 | .25 | .18 |
| | 591 | Autotrucks | .24 | .21 | .43 | .26 | .24 |
| | 592 | Automobiles, K.D. and parts | .31 | .29 | .39 | .35 | .21 |
| | 593 | Automobile tires | .29 | .27 | .30 | .32 | .20 |
| | 610 | Furniture, metal | .25 | .24 | .27 | .25 | .19 |
| | 611 | Furniture, not metal | .20 | .19 | .21 | .20 | .20 |
| | 697 | Building woodwork (millwork) | .15 | .16 | .22 | .15 | .23 |
| | | Appliances | .26 | .24 | .30 | .28 | .20 |
| | 540 | Cement, building | .52 | .57 | .38 | .52 | .39 |
| | 550 | Brick, common | .37 | .40 | .31 | .36 | .49 |
| | 551 | Brick, and building tile | .30 | .31 | .28 | .31 | .28 |
| | 552 | Artificial stone, N.O.S. | .24 | .21 | .35 | .30 | .43 |
| | 560 | Lime, common (quick, slaked) | .22 | .20 | .22 | .27 | .20 |
| | 561 | Plaster (stucco or wall) etc. | .25 | .27 | .29 | .22 | .25 |
| | 18 | Building Material | .39 | .40 | .33 | .41 | .31 |
| | 580 | Salt | .28 | .26 | .26 | .30 | .27 |
| | 470 | Sugar (beet or cane) | .34 | .34 | .31 | .35 | .24 |
| | 471 | Table syrups and molasses | .27 | .29 | .24 | .27 | .22 |
| | 472 | Molasses, blackstrap, etc. | .40 | .45 | .30 | .42 | .28 |
| | 620 | Beverages | .36 | .36 | .30 | .36 | .20 |
| | 630 | Ice | .54 | .54 | .56 | .42 | .33 |
| | 680 | Canned food products | .31 | .28 | .33 | .34 | .20 |
| | 19 | Manufactured Food | .31 | .29 | .29 | .33 | .23 |
| | 650 | Newsprint paper | .29 | .33 | .27 | .22 | .32 |
| | 651 | Printing paper, N.O.S. | .28 | .29 | .30 | .28 | .23 |
| | 654 | Paper bags and wrapping paper | .28 | .29 | .31 | .27 | .24 |
| | 655 | Paperboard, wallboard | .25 | .27 | .22 | .25 | .23 |
| | 696 | Building paper and roofing | .30 | .29 | .33 | .30 | .28 |
| | 20 | Paper and Products | .28 | .30 | .27 | .26 | .24 |
| | 140 | Rosin | .24 | .29 | .22 | .23 | .22 |
| | 441 | Turpentine | .29 | .24 | .31 | .31 | .32 |
| | 660 | Alcohol, denatured or wood | .29 | .30 | .27 | .27 | .28 |
| | 662 | Explosives, N.O.S. | .66 | .59 | .73 | .73 | .50 |
| | 691 | Paints, oil and varnishes | .32 | .30 | .41 | .35 | .26 |
| | 21 | Chemicals | .36 | .35 | .53 | .41 | .33 |
| | 271 | Leather | .28 | .28 | .30 | .40 | .24 |
| | 670 | Cotton cloth and fabrics | .22 | .25 | .20 | .25 | .23 |
| | 671 | Bagging and bags | .25 | .21 | .24 | .29 | .18 |
| | 22 | Textiles and Leather | .24 | .26 | .21 | .28 | .22 |
| | 570 | Sewer pipe and draintile | .24 | .24 | .23 | .27 | .23 |
| | 699 | Glass, flat, not plate | .40 | .35 | .54 | .37 | .60 |
| | 700 | Glass, Bottles, jars, etc. | .25 | .23 | .33 | .27 | .23 |
| | 23 | Glass and Tile | .28 | .24 | .30 | .28 | .27 |
| | 690 | Tobacco, manufactured | .37 | .41 | .41 | .29 | .40 |
| | 698 | Soap and washing compounds | .30 | .29 | .27 | .32 | .24 |
| | 701 | Manufactures miscellaneous | .28 | .27 | .31 | .30 | .26 |
| | 24 | Miscellaneous | .28 | .27 | .32 | .30 | .27 |

Analysis 45.13 Average Load of Railway Intermediate Traffic, in Tons - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | FOCA-NOXTAS |
|---|---|---|---|---|---|---|---|
| | | ALL COMMODITIES | 24 | 26 | 23 | 20 | 30 |
| | 10 | Wheat | 42 | 43 | 42 | 43 | 36 |
| | 20 | Corn | 37 | 36 | 30 | 38 | 42 |
| | 30 | Oats | 28 | 28 | 22 | 32 | 28 |
| | 40 | Barley and rye | 34 | 30 | 26 | 43 | 31 |
| | 162 | Flaxseed | 33 | 29 | 21 | 40 | 15 |
| | 163 | Sugar beets | 41 | 53 | 3 | 41 | - |
| 01 | | Bulk Grain and Beets | 37 | 35 | 36 | 39 | 37 |
| | 41 | Rice | 23 | 25 | 20 | 24 | 36 |
| | 42 | Grain, N.O.S. | 28 | 24 | 43 | 35 | 49 |
| | 50 | Flour, wheat | 24 | 25 | 20 | 24 | 21 |
| | 51 | Meal, corn | 25 | 24 | 19 | 27 | 25 |
| | 52 | Flour and meal, edible | 24 | 25 | 15 | 26 | 24 |
| | 60 | Cereal food preparations | 17 | 23 | 17 | 17 | 19 |
| | 61 | Mill products, N.O.S. | 22 | 22 | 18 | 24 | 20 |
| 02 | | Other Cereals | 23 | 24 | 19 | 23 | 21 |
| | 70 | Hay and alfalfa | 13 | 14 | 12 | 13 | 13 |
| | 71 | Straw | 14 | 13 | 13 | 29 | 25 |
| | 80 | Tobacco, leaf | 11 | 13 | 10 | 18 | 10 |
| | 90 | Cotton in bales | 15 | 15 | 15 | 16 | 16 |
| | 91 | Cotton linters, mills, etc. | 20 | 20 | 18 | 22 | 19 |
| 03 | | Cotton, Hay and Tobacco | 15 | 15 | 14 | 16 | 13 |
| | 110 | Oranges and grapefruit | 17 | 17 | 17 | 17 | 17 |
| | 111 | Lemons, limes, and citrus | 14 | 14 | 14 | 14 | 17 |
| | 120 | Apples, fresh | 17 | 17 | 17 | 18 | 14 |
| | 121 | Bananas | 10 | 11 | 10 | 10 | 14 |
| | 122 | Berries, fresh | 22 | 19 | 21 | 28 | 7 |
| | 123 | Cantaloupes and melons | 11 | 11 | 12 | 11 | 13 |
| | 124 | Grapes, fresh | 14 | 14 | 14 | 14 | 16 |
| | 125 | Peaches, fresh | 12 | 11 | 11 | 13 | 11 |
| | 126 | Watermelons | 13 | 13 | 12 | 13 | 14 |
| | 127 | Fruits, fresh, domestic | 15 | 13 | 13 | 15 | 15 |
| | 128 | Fruits, fresh, tropical | 12 | 14 | 12 | 11 | 13 |
| | 130 | Potatoes, other than sweet | 17 | 19 | 18 | 16 | 15 |
| | 140 | Cabbage | 13 | 13 | 12 | 13 | 12 |
| | 141 | Onions | 13 | 13 | 12 | 13 | 13 |
| | 142 | Tomatoes | 11 | 11 | 10 | 11 | 11 |
| | 143 | Vegetables, fresh, N.O.S. | 11 | 11 | 11 | 11 | 11 |
| 04 | | Perishables | 14 | 14 | 14 | 13 | 14 |
| | 150 | Beans and peas, dried | 27 | 26 | 25 | 28 | 23 |
| | 151 | Fruits, dried or evaporated | 35 | 28 | 34 | 34 | 20 |
| | 152 | Vegetables, dry, N.O.S. | 14 | 15 | 15 | 14 | 16 |
| | 161 | Peanuts | 15 | 14 | 18 | 13 | 14 |
| | 164 | Products of agriculture | 21 | 22 | 20 | 20 | 24 |
| | 282 | Animal products, N.O.S. | 19 | 18 | 17 | 20 | 16 |
| | 640 | Fertilizers, N.O.S. | 33 | 31 | 28 | 40 | 28 |
| 05 | | Miscellaneous Farm Products | 24 | 23 | 21 | 27 | 21 |
| | 170 | Horses, mules, ponies | 12 | 11 | 13 | 12 | 16 |
| | 180 | Cattle and calves, single-deck | 11 | 11 | 10 | 11 | 11 |
| | 181 | Calves, double-deck | 11 | 10 | 11 | 11 | - |
| | 190 | Sheep, goats, single-deck | 8 | 9 | 9 | 8 | 8 |
| | 191 | Sheep, goats, double-deck | 8 | 8 | 9 | 9 | 13 |
| | 200 | Hogs, single-deck | 9 | 10 | 11 | 8 | 19 |
| | 201 | Hogs, double-deck | 12 | 12 | 12 | 12 | 11 |
| | 230 | Poultry, live | 8 | 7 | 9 | 9 | 9 |
| | 260 | Wool | 14 | 13 | 16 | 17 | 15 |
| | 270 | Hides, green | 22 | 22 | 23 | 21 | 20 |
| | 281 | Animals, live, N.O.S. | 16 | 12 | 22 | 35 | 17 |
| 06 | | Live Animals | 11 | 12 | 13 | 11 | 13 |
| | 210 | Fresh meats, N.O.S. | 12 | 12 | 13 | 16 | 13 |
| | 220 | Meats, cured, dried | 15 | 15 | 14 | 17 | 15 |
| | 221 | Butterine and margarine | 12 | 12 | 13 | 19 | 9 |
| | 222 | Packing-house products | 17 | 17 | 16 | 19 | 15 |
| | 231 | Poultry, dressed | 11 | 11 | 12 | 11 | 16 |
| | 240 | Eggs | 13 | 12 | 11 | 15 | 11 |
| | 250 | Butter | 12 | 12 | 13 | 12 | 12 |
| | 251 | Cheese | 14 | 14 | 13 | 15 | 13 |
| 07 | | Animal Products, Edible | 13 | 12 | 14 | 15 | 14 |
| | 290 | Anthracite coal | 43 | 43 | 48 | 48 | 32 |
| | 300 | Bituminous coal | 47 | 53 | 50 | 20 | 51 |
| | 310 | Coke | 31 | 30 | 31 | 32 | 34 |
| 08 | | Coal and Coke | 47 | 52 | 50 | 20 | 51 |
| | 320 | Iron ore | 76 | 76 | 70 | 60 | 27 |
| | 330 | Copper ore concentrates | 54 | 76 | 43 | 54 | 35 |
| | 331 | Lead ore and concentrates | 45 | 39 | 48 | 43 | 13 |
| | 332 | Zinc ore and concentrates | 53 | 53 | 52 | 53 | - |
| | 333 | Ores and concentrates | 46 | 46 | 51 | 48 | 30 |
| | 392 | Products of mines, N.O.S. | 37 | 36 | 36 | 39 | 34 |
| 09 | | Ores | 40 | 42 | 38 | 41 | 35 |
| | 350 | Gravel and sand | 53 | 42 | 51 | 67 | 17 |
| | 351 | Stone, broken, ground, etc. | 43 | 42 | 47 | 43 | 34 |
| | 352 | Stone, rough, N.O.S. | 37 | 39 | 34 | 38 | 34 |
| | 353 | Stone, finished, N.O.S. | 28 | 27 | 32 | 30 | 24 |
| 10 | | Sand, Stone and Gravel | 38 | 38 | 38 | 47 | 28 |
| | 390 | Phosphate rock, crude, etc. | 51 | 44 | 50 | 63 | 63 |
| | 391 | Sulphur (brimstone) | 42 | 43 | 43 | 42 | 63 |
| | 661 | Sulphuric acid | 47 | 32 | 52 | 48 | 75 |
| 11 | | Sulphur and Sulphuric Acid | 44 | 41 | 48 | 43 | 69 |
| | 360 | Petroleum, crude | 35 | 31 | 33 | 35 | 8 |
| | 370 | Asphalt (natural, by-products) | 33 | 29 | 36 | 34 | 34 |
| | 450 | Petroleum oils, refined | 27 | 28 | 27 | 27 | 27 |
| | 451 | Fuel, road, and residual oils | 30 | 31 | 30 | 30 | 29 |
| | 452 | Lubricating oils | 21 | 22 | 18 | 22 | 18 |
| | 453 | Petroleum products, etc. | 25 | 25 | 29 | 24 | 25 |
| 12 | | Petroleum and Products | 27 | 27 | 26 | 28 | 24 |
| | 400 | Logs | 32 | 32 | 31 | 37 | 20 |
| | 401 | Posts, poles, and piling | 27 | 28 | 28 | 25 | 29 |
| | 402 | Wood (fuel) | 34 | 35 | 31 | 34 | 44 |
| | 410 | Ties, railroad | 34 | 38 | 29 | 34 | 29 |
| | 420 | Pulpwood | 26 | 26 | 30 | 28 | 27 |
| | 430 | Lumber, shingles, and lath | 25 | 23 | 26 | 24 | 23 |
| | 431 | Box, crate, and cooperage | 22 | 21 | 21 | 23 | 22 |
| | 432 | Veneer and built-up wood | 22 | 22 | 15 | 25 | 21 |
| | 442 | Crude rubber (unreclaimed) | 38 | 38 | 43 | 39 | 35 |
| | 443 | Products of forests, N.O.S. | 17 | 16 | 18 | 17 | 18 |
| 13 | | Forest Products | 25 | 23 | 27 | 24 | 23 |
| | 100 | Cottonseed | 27 | 31 | 24 | 37 | 17 |
| | 101 | Cottonseed meal and cake | 23 | 24 | 23 | 23 | 22 |
| | 160 | Vegetable - oil cake, etc. | 24 | 25 | 21 | 26 | 26 |
| | 460 | Cottonseed oil | 22 | 28 | 17 | 30 | 29 |
| | 461 | Linseed oil | 25 | 22 | 25 | 28 | 33 |
| | 462 | Vegetable oils, N.O.S. | 29 | 27 | 29 | 30 | 30 |
| | 280 | Fish or sea-animal oil | 29 | 21 | 30 | 30 | 34 |
| 14 | | Oils - Vegetable and Animal | 24 | 25 | 20 | 27 | 24 |
| | 490 | Iron, pig | 53 | 50 | 53 | 57 | 46 |
| | 491 | Iron and steel, 6th class | 47 | 47 | 43 | 49 | 26 |
| | 500 | Rails, fastenings, etc. | 35 | 30 | 34 | 37 | 27 |
| | 510 | Cast-iron pipe and fittings | 24 | 23 | 24 | 24 | 22 |
| | 511 | Iron and steel pipe, fittings | 30 | 28 | 28 | 30 | 20 |
| | 512 | Iron and steel: Nails, wire | 25 | 21 | 24 | 30 | 21 |
| | 513 | Iron and steel, 5th class | 30 | 28 | 26 | 36 | 25 |
| | 583 | Railway car wheels, axles | 26 | 18 | 29 | 30 | 27 |
| | 698 | Furnace slag | 51 | 38 | 51 | 10 | 32 |
| | 693 | Scrap iron and scrap steel | 39 | 38 | 46 | 47 | 38 |
| 15 | | Iron and Steel | 51 | 39 | 49 | 55 | 45 |
| | 520 | Copper: Ingot, matte, pig | 50 | 40 | 57 | 54 | 40 |
| | 521 | Copper, brass and bronze: Bar | 21 | 19 | 27 | 17 | 8 |
| | 522 | Lead and zinc: Ingot, bar | 47 | 43 | 48 | 50 | 49 |
| | 523 | Aluminum: Ingot, pig, slab | 34 | 28 | 42 | 41 | 27 |
| 16 | | All Other Metals | 46 | 38 | 48 | 50 | 35 |
| | 530 | Machinery and boilers | 18 | 17 | 15 | 20 | 15 |
| | 580 | Agricultural implements, etc. | 16 | 16 | 17 | 16 | 17 |
| | 581 | Vehicles, horse-drawn, etc. | 15 | 14 | 13 | 16 | 21 |
| | 582 | Tractors and parts | 18 | 15 | 16 | 21 | 15 |
| | 590 | Automobiles (passenger) | 6 | 6 | 6 | 7 | 7 |
| | 591 | Autotrucks | 8 | 8 | 7 | 8 | 6 |
| | 592 | Automobiles, K.D. and parts | 19 | 18 | 19 | 20 | 12 |
| | 593 | Automobile tires | 14 | 13 | 12 | 16 | 12 |
| | 610 | Furniture, metal | 12 | 12 | 12 | 13 | 8 |
| | 611 | Furniture, not metal | 7 | 8 | 7 | 8 | 7 |
| | 697 | Building woodwork | 21 | 20 | 22 | 22 | 19 |
| 17 | | Appliances | 12 | 12 | 11 | 12 | 9 |
| | 540 | Cement, building | 36 | 33 | 35 | 43 | 32 |
| | 550 | Brick, common | 34 | 34 | 36 | 34 | 35 |
| | 551 | Brick and building tile | 33 | 34 | 29 | 34 | 36 |
| | 552 | Artificial stone, N.O.S. | 32 | 31 | 33 | 32 | 30 |
| | 560 | Lime, common, quick, slaked | 24 | 22 | 26 | 25 | 20 |
| | 561 | Plaster, stucco, etc. | 29 | 27 | 31 | 30 | 29 |
| 18 | | Building Material | 33 | 31 | 32 | 34 | 29 |
| | 380 | Salt | 26 | 27 | 25 | 27 | 25 |
| | 470 | Sugar (beet or cane) | 30 | 25 | 26 | 32 | 30 |
| | 471 | Table syrups and molasses | 32 | 36 | 25 | 32 | 25 |
| | 472 | Molasses, blackstrap, etc. | 44 | 37 | 46 | 49 | - |
| | 620 | Beverages | 20 | 17 | 19 | 24 | 18 |
| | 630 | Ice | 44 | 40 | 30 | 23 | - |
| | 680 | Canned food products | 25 | 22 | 21 | 30 | 23 |
| 19 | | Manufactured Food | 27 | 24 | 25 | 30 | 26 |
| | 650 | Newsprint paper | 26 | 25 | 25 | 27 | 22 |
| | 651 | Printing paper, N.O.S. | 29 | 31 | 22 | 34 | 25 |
| | 694 | Paper bags, wrapping paper | 22 | 21 | 20 | 24 | 22 |
| | 695 | Paperboard, wallboard | 22 | 21 | 22 | 23 | 19 |
| | 696 | Building paper, roofing | 22 | 21 | 22 | 23 | 23 |
| 20 | | Paper and Products | 24 | 22 | 22 | 25 | 21 |
| | 440 | Rosin | 24 | 24 | 24 | 24 | 25 |
| | 441 | Turpentine | 26 | 26 | 25 | 27 | 27 |
| | 660 | Alcohol, denatured or wood | 24 | 22 | 26 | 26 | 25 |
| | 662 | Explosives, N.O.S. | 14 | 13 | 17 | 18 | 14 |
| | 691 | Paints in oil and varnishes | 26 | 22 | 21 | 35 | 39 |
| 21 | | Chemicals | 23 | 21 | 24 | 27 | 24 |
| | 271 | Leather | 18 | 18 | 18 | 21 | 14 |
| | 670 | Cotton cloth and fabrics | 10 | 9 | 9 | 16 | 10 |
| | 671 | Bagging and bags | 19 | 18 | 16 | 20 | 21 |
| 22 | | Textiles and Leather | 12 | 13 | 10 | 18 | 12 |
| | 570 | Sewer pipe and draintile | 17 | 18 | 15 | 16 | 16 |
| | 699 | Glass, flat, not plate | 29 | 25 | 28 | 33 | 26 |
| | 700 | Glass: Bottles, jars, etc. | 24 | 30 | 17 | 17 | 18 |
| 23 | | Glass and Tile | 23 | 27 | 17 | 19 | 18 |
| | 690 | Tobacco, manufactured | 19 | 16 | 18 | 20 | 17 |
| | 698 | Soap and washing compounds | 20 | 20 | 21 | 21 | 20 |
| | 701 | Manufactures, miscellaneous | 20 | 20 | 21 | 21 | 20 |
| 24 | | Miscellaneous | 20 | 20 | 21 | 21 | 20 |



Analysis 45.14 Average Haul of Railway Intermediate Traffic, in Miles - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | FOCA-NOXTAS |
|---|---|---|---|---|---|---|---|
| | | ALL COMMODITIES | 232 | 178 | 246 | 372 | 234 |
| | 10 | Wheat | 206 | 173 | 256 | 206 | 256 |
| | 20 | Corn | 274 | 180 | 226 | 394 | 404 |
| | 30 | Oats | 179 | 284 | 193 | 73 | 388 |
| | 40 | Barley and rye | 206 | 199 | 201 | 207 | 399 |
| | 162 | Flaxseed | 236 | 260 | 301 | 218 | 194 |
| | 163 | Sugar beets | 74 | 120 | 230 | 73 | - |
| 01 | | Bulk Grain and Beets | 213 | 190 | 241 | 221 | 319 |
| | 41 | Rice | 370 | 219 | 308 | 478 | 508 |
| | 42 | Grain, N.O.S. | 277 | 298 | 123 | 419 | 335 |
| | 50 | Flour, wheat | 242 | 246 | 296 | 220 | 344 |
| | 51 | Meal, corn | 245 | 241 | 240 | 243 | 347 |
| | 52 | Flour and meal, edible | 256 | 258 | 247 | 212 | 476 |
| | 60 | Cereal food preparations | 289 | 284 | 298 | 263 | 308 |
| | 61 | Mill products, N.O.S. | 227 | 236 | 220 | 204 | 338 |
| 02 | | Other Cereals | 244 | 243 | 251 | 234 | 345 |
| | 70 | Hay and alfalfa | 189 | 225 | 280 | 85 | 318 |
| | 71 | Straw | 184 | 173 | 225 | 260 | 228 |
| | 80 | Tobacco, leaf | 206 | 168 | 223 | 176 | 372 |
| | 90 | Cotton in bales | 210 | 265 | 196 | 157 | 299 |
| | 91 | Cotton linters, mills, etc. | 305 | 370 | 297 | 302 | 243 |
| 03 | | Cotton, Hay and Tobacco | 216 | 256 | 232 | 145 | 316 |
| | 110 | Oranges and grapefruit | 432 | 334 | 361 | 616 | 121 |
| | 111 | Lemons, limes, and citrus | 992 | 1408 | 334 | 650 | 148 |
| | 120 | Apples, fresh | 415 | 244 | 334 | 561 | 167 |
| | 121 | Bananas | 288 | 211 | 242 | 365 | 119 |
| | 122 | Berries, fresh | 518 | 405 | 677 | 706 | 107 |
| | 123 | Cantaloupes and melons | 559 | 450 | 579 | 610 | 134 |
| | 124 | Grapes, fresh | 677 | 519 | 564 | 750 | 191 |
| | 125 | Peaches, fresh | 347 | 283 | 375 | 449 | 130 |
| | 126 | Watermelons | 360 | 678 | 319 | 390 | 141 |
| | 127 | Fruits, fresh, domestic | 699 | 405 | 669 | 753 | 161 |
| | 128 | Fruits, fresh, tropical | 301 | 242 | 309 | 473 | 305 |
| | 130 | Potatoes, other than sweet | 234 | 193 | 295 | 396 | 242 |
| | 140 | Cabbage | 400 | 345 | 399 | 507 | 114 |
| | 141 | Onions | 446 | 383 | 315 | 494 | 244 |
| | 142 | Tomatoes | 446 | 463 | 446 | 496 | 133 |
| | 143 | Vegetables, fresh, N.O.S. | 546 | 463 | 480 | 626 | 135 |
| 04 | | Perishables | 447 | 299 | 372 | 598 | 144 |
| | 150 | Beans and peas, dried | 364 | 365 | 330 | 414 | 360 |
| | 151 | Fruits, dried or evaporated | 644 | 531 | 567 | 786 | 691 |
| | 152 | Vegetables, dry, N.O.S. | 357 | 256 | 420 | 492 | 233 |
| | 161 | Peanuts | 328 | 234 | 287 | 444 | 460 |
| | 164 | Products of agriculture | 335 | 290 | 279 | 439 | 496 |
| | 282 | Animal products, N.O.S. | 287 | 221 | 365 | 462 | 280 |
| | 640 | Fertilizers, N.O.S. | 280 | 195 | 261 | 361 | 284 |
| 05 | | Miscellaneous Farm Products | 357 | 255 | 286 | 541 | 360 |
| | 170 | Horses, mules, ponies | 296 | 327 | 247 | 313 | 276 |
| | 180 | Cattle and calves, single-deck | 258 | 280 | 236 | 215 | 232 |
| | 181 | Calves, double-deck | 178 | 122 | 197 | 144 | - |
| | 190 | Sheep, goats, single-deck | 386 | 245 | 121 | 409 | 281 |
| | 191 | Sheep, goats, double-deck | 387 | 279 | 154 | 471 | 262 |
| | 200 | Hogs, single-deck | 282 | 336 | 268 | 242 | 166 |
| | 201 | Hogs, double-deck | 381 | 389 | 192 | 381 | 88 |
| | 230 | Poultry, live | 366 | 396 | 343 | 420 | 292 |
| | 260 | Wool | 384 | 345 | 334 | 518 | 402 |
| | 270 | Hides, green | 345 | 340 | 296 | 366 | 344 |
| | 281 | Animals, live, N.O.S. | 153 | 117 | 255 | 166 | 99 |
| 06 | | Live Animals | 301 | 299 | 252 | 310 | 316 |
| | 210 | Fresh meats, N.O.S. | 393 | 399 | 288 | 481 | 379 |
| | 220 | Meats, cured, dried, etc. | 348 | 297 | 309 | 461 | 431 |
| | 221 | Butterine and margarine | 286 | 161 | 379 | 443 | 243 |
| | 222 | Packing-house products | 277 | 261 | 277 | 304 | 484 |
| | 231 | Poultry, dressed | 392 | 391 | 268 | 439 | 251 |
| | 240 | Eggs | 457 | 391 | 269 | 600 | 303 |
| | 250 | Butter | 348 | 344 | 344 | 355 | 357 |
| | 251 | Cheese | 300 | 290 | 290 | 358 | 357 |
| 07 | | Animal Products, Edible | 367 | 361 | 289 | 452 | 397 |
| | 290 | Anthracite coal | 112 | 112 | 107 | 175 | 125 |
| | 300 | Bituminous coal | 158 | 150 | 169 | 160 | 229 |
| | 310 | Coke | 187 | 146 | 231 | 254 | 397 |
| 08 | | Coal and Coke | 157 | 149 | 170 | 163 | 231 |
| | 320 | Iron ore | 86 | 84 | 297 | 383 | 197 |
| | 330 | Copper ore concentrates | 101 | 219 | 47 | 214 | 614 |
| | 331 | Lead ore and concentrates | 76 | 198 | 122 | 68 | 433 |
| | 332 | Zinc ore and concentrates | 103 | 70 | 266 | 115 | - |
| | 333 | Ores and concentrates | 241 | 207 | 270 | 299 | 175 |
| | 392 | Products of mines, N.O.S. | 235 | 144 | 323 | 303 | 285 |
| 09 | | Ores | 192 | 134 | 307 | 279 | 224 |
| | 350 | Gravel and sand | 121 | 155 | 97 | 113 | 151 |
| | 351 | Stone, broken, ground, etc. | 123 | 144 | 102 | 120 | 137 |
| | 352 | Stone, rough, N.O.S. | 235 | 229 | 242 | 286 | 208 |
| | 353 | Stone, finished, N.O.S. | 236 | 210 | 271 | 293 | 272 |
| 10 | | Sand, Stone and Gravel | 168 | 190 | 160 | 139 | 214 |
| | 390 | Phosphate rock, crude, etc. | 174 | 148 | 194 | 198 | 421 |
| | 391 | Sulphur (brimstone) | 282 | 344 | 275 | 276 | 264 |
| | 661 | Sulphuric acid | 225 | 163 | 161 | 276 | 169 |
| 11 | | Sulphur and Sulphuric Acid | 248 | 295 | 197 | 279 | 358 |
| | 360 | Petroleum, crude | 368 | 173 | 150 | 383 | 160 |
| | 370 | Asphalt (natural, by-products) | 199 | 135 | 185 | 286 | 216 |
| | 450 | Petroleum oils, refined | 243 | 171 | 174 | 290 | 137 |
| | 451 | Fuel, road and residual oils | 284 | 164 | 200 | 309 | 131 |
| | 452 | Lubricating oils, etc. | 244 | 194 | 238 | 319 | 210 |
| | 453 | Petroleum products, N.O.S. | 215 | 146 | 500 | 327 | 216 |
| 12 | | Petroleum and Products | 252 | 170 | 182 | 303 | 162 |
| | 400 | Logs | 187 | 145 | 170 | 255 | 399 |
| | 401 | Posts, poles, and piling | 261 | 207 | 296 | 295 | 220 |
| | 402 | Wood (fuel) | 178 | 150 | 319 | 171 | 223 |
| | 410 | Ties, railroad | 217 | 216 | 189 | 236 | 279 |
| | 420 | Pulpwood | 114 | 91 | 143 | 140 | 171 |
| | 430 | Lumber, shingles, and lath | 362 | 230 | 344 | 533 | 173 |
| | 431 | Box, crate, and cooperage | 288 | 238 | 274 | 393 | 221 |
| | 432 | Veneer and built-up wood | 357 | 276 | 305 | 467 | 287 |
| | 442 | Crude rubber (unreclaimed) | 106 | 100 | 235 | 361 | 609 |
| | 443 | Products of forests, N.O.S. | 234 | 204 | 267 | 367 | 211 |
| 13 | | Forest Products | 328 | 212 | 325 | 489 | 189 |
| | 100 | Cottonseed | 129 | 93 | 106 | 161 | 316 |
| | 101 | Cottonseed meal and cake | 280 | 316 | 226 | 264 | 443 |
| | 160 | Vegetable - oil cake, etc. | 305 | 251 | 357 | 288 | 260 |
| | 460 | Cottonseed oil | 235 | 186 | 262 | 302 | 184 |
| | 461 | Linseed oil | 282 | 55 | 260 | 440 | 139 |
| | 462 | Vegetable oils, N.O.S. | 510 | 251 | 370 | 772 | 181 |
| | 280 | Fish or sea-animal oil | 444 | 305 | 249 | 620 | 199 |
| 14 | | Oil - Vegetable and Animal | 302 | 249 | 253 | 426 | 238 |
| | 490 | Iron, pig | 236 | 184 | 248 | 419 | 254 |
| | 491 | Iron and steel, 6th class | 184 | 122 | 93 | 284 | 430 |
| | 500 | Rails, fastenings, etc. | 231 | 155 | 173 | 314 | 107 |
| | 510 | Cast-iron pipe and fittings | 237 | 195 | 247 | 347 | 217 |
| | 511 | Iron and steel pipe, fittings | 251 | 215 | 284 | 281 | 241 |
| | 512 | Iron and steel: Nails, wire | 223 | 191 | 217 | 305 | 275 |
| | 513 | Iron and steel, 5th class | 216 | 162 | 232 | 425 | 225 |
| | 583 | Railway car wheels, axles | 242 | 161 | 197 | 52 | 179 |
| | 698 | Furnace slag | 150 | 87 | 156 | 409 | 141 |
| | 693 | Scrap iron and scrap steel | 130 | 118 | 190 | 210 | 89 |
| 15 | | Iron and Steel | 216 | 167 | 224 | 353 | 210 |
| | 520 | Copper: Ingot, matte, pig | 504 | 172 | 708 | 596 | 660 |
| | 521 | Copper, brass, and bronze | 190 | 157 | 209 | 417 | 270 |
| | 522 | Lead and zinc: Ingot, bar | 408 | 347 | 537 | 458 | 467 |
| | 523 | Aluminum: Ingot, pig, slab | 227 | 157 | 268 | 125 | 302 |
| 16 | | All Other Metals | 423 | 260 | 469 | 519 | 407 |
| | 530 | Machinery and boilers | 296 | 226 | 278 | 526 | 247 |
| | 580 | Agricultural implements, etc. | 318 | 268 | 261 | 409 | 377 |
| | 581 | Vehicles, horse-drawn, etc. | 327 | 306 | 201 | 446 | 305 |
| | 582 | Tractors and parts | 415 | 236 | 264 | 564 | 497 |
| | 590 | Automobile (Passenger) | 315 | 243 | 258 | 477 | 392 |
| | 591 | Autotrucks | 328 | 246 | 231 | 584 | 369 |
| | 592 | Automobiles, K.D. and parts | 348 | 263 | 335 | 673 | 213 |
| | 593 | Automobile tires | 328 | 221 | 304 | 568 | 292 |
| | 610 | Furniture, metal | 315 | 260 | 258 | 405 | 300 |
| | 611 | Furniture, not metal | 270 | 205 | 278 | 433 | 315 |
| | 697 | Building woodwork | 434 | 365 | 389 | 504 | 368 |
| 17 | | Appliances | 326 | 247 | 297 | 535 | 294 |
| | 540 | Cement, building | 113 | 88 | 177 | 145 | 193 |
| | 550 | Brick, common | 168 | 165 | 169 | 175 | 145 |
| | 551 | Brick and building tile | 202 | 172 | 250 | 276 | 184 |
| | 552 | Artificial stone, N.O.S. | 221 | 159 | 293 | 403 | 223 |
| | 560 | Lime, common, quick, slaked | 208 | 175 | 225 | 234 | 308 |
| | 561 | Plaster, stucco, etc. | 246 | 193 | 261 | 304 | 227 |
| 18 | | Building Material | 143 | 113 | 198 | 185 | 201 |
| | 380 | Salt | 247 | 194 | 272 | 342 | 249 |
| | 470 | Sugar (beet or cane) | 335 | 116 | 284 | 509 | 611 |
| | 471 | Table syrups and molasses | 301 | 279 | 279 | 375 | 487 |
| | 472 | Molasses, blackstrap, etc. | 346 | 155 | 467 | 386 | - |
| | 620 | Beverages | 324 | 214 | 380 | 567 | 285 |
| | 630 | Ice | 77 | 49 | 109 | 125 | - |
| | 680 | Canned food products | 342 | 267 | 255 | 470 | 500 |
| 19 | | Manufactured Food | 307 | 215 | 264 | 451 | 467 |
| | 650 | Newsprint paper | 284 | 174 | 295 | 352 | 209 |
| | 651 | Printing paper, N.O.S. | 230 | 210 | 279 | 328 | 263 |
| | 694 | Paper bags, wrapping paper | 243 | 178 | 287 | 356 | 204 |
| | 695 | Paperboard, wallboard | 292 | 170 | 300 | 311 | 192 |
| | 696 | Building paper and roofing | 221 | 163 | 231 | 358 | 216 |
| 20 | | Paper and Products | 227 | 180 | 274 | 352 | 211 |
| | 440 | Rosin | 268 | 212 | 316 | 354 | 200 |
| | 441 | Turpentine | 284 | 158 | 380 | 387 | 133 |
| | 660 | Alcohol, denatured or wood | 237 | 163 | 298 | 483 | 201 |
| | 662 | Explosives, N.O.S. | 207 | 173 | 225 | 308 | 263 |
| | 691 | Paints in oil and varnishes | 279 | 210 | 288 | 385 | 251 |
| 21 | | Chemicals | 254 | 188 | 311 | 466 | 197 |
| | 271 | Leather | 164 | 156 | 171 | 163 | 390 |
| | 670 | Cotton cloth and fabrics | 267 | 173 | 282 | 418 | 324 |
| | 671 | Bagging and bags | 235 | 172 | 187 | 285 | 407 |
| 22 | | Textile and Leather | 237 | 164 | 264 | 324 | 353 |
| | 570 | Sewer pipe and draintile | 194 | 234 | 196 | 138 | 247 |
| | 699 | Glass, flat, not plate | 191 | 110 | 232 | 373 | 284 |
| | 700 | Glass: Bottles, jars, etc. | 263 | 254 | 261 | 300 | 243 |
| 23 | | Glass and Tile | 241 | 228 | 243 | 286 | 251 |
| | 690 | Tobacco, manufactured | 363 | 208 | 243 | 688 | 348 |
| | 698 | Soap and washing compounds | 179 | 115 | 251 | 295 | 181 |
| | 701 | Manufactures, miscellaneous | 238 | 190 | 253 | 300 | 308 |
| 24 | | Miscellaneous | 238 | 188 | 252 | 305 | 313 |

SECTION 45. PRESENT CLASSIFICATION

Analysis 45.15 Average Revenue of Railway Intermediate Traffic, per Ton Mile - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | | $ | $ | $ | $ | $ |
| | | ALL COMMODITIES | .0076 | .0070 | .0083 | .0081 | .0068 |
| | 10 | Wheat | .0063 | .0048 | .0066 | .0074 | .0085 |
| | 20 | Corn | .0058 | .0061 | .0081 | .0054 | .0057 |
| | 30 | Oats | .0061 | .0055 | .0089 | .0073 | .0053 |
| | 40 | Barley and rye | .0067 | .0060 | .0088 | .0073 | .0053 |
| | 162 | Flaxseed | .0072 | .0086 | .0083 | .0085 | .0082 |
| | 163 | Sugar beets | .0073 | .0197 | .0123 | .0072 | - |
| 01 | | Bulk Grain and Beets | .0061 | .0054 | .0071 | .0063 | .0068 |
| | 41 | Rice | .0069 | .0090 | .0084 | .0057 | .0052 |
| | 42 | Grain, N.O.S. | .0066 | .0065 | .0121 | .0062 | .0080 |
| | 50 | Flour, wheat | .0063 | .0056 | .0081 | .0065 | .0058 |
| | 51 | Meal, corn | .0060 | .0055 | .0064 | .0060 | .0043 |
| | 52 | Flour and meal | .0059 | .0056 | .0077 | .0070 | .0043 |
| | 60 | Cereal food preparations | .0077 | .0078 | .0085 | .0074 | .0078 |
| | 61 | Mill products, N.O.S. | .0061 | .0055 | .0079 | .0066 | .0061 |
| 02 | | Other Cereals | .0063 | .0057 | .0081 | .0066 | .0059 |
| | 70 | Hay and alfalfa | .0081 | .0078 | .0073 | .0091 | .0087 |
| | 71 | Straw | .0102 | .0112 | .0061 | .0090 | .0110 |
| | 80 | Tobacco, leaf | .0151 | .0126 | .0114 | .0120 | .0129 |
| | 90 | Cotton in bales | .0105 | .0072 | .0096 | .0156 | .0065 |
| | 91 | Cotton linters, noils | .0065 | .0048 | .0074 | .0096 | .0087 |
| 03 | | Cotton, Hay and Tobacco | .0096 | .0074 | .0095 | .0138 | .0102 |
| | 110 | Oranges and grapefruit | .0099 | .0086 | .0120 | .0095 | .0139 |
| | 111 | Lemons, limes, and citrus | .0092 | .0073 | .0091 | .0095 | .0136 |
| | 120 | Apples, fresh | .0089 | .0091 | .0083 | .0089 | .0118 |
| | 121 | Bananas | .0187 | .0182 | .0185 | .0189 | .0279 |
| | 122 | Berries, fresh | .0087 | .0090 | .0091 | .0069 | .0122 |
| | 125 | Cantaloupes and melons | .0090 | .0091 | .0091 | .0089 | .0153 |
| | 124 | Grapes, fresh | .0093 | .0082 | .0098 | .0090 | .0112 |
| | 125 | Peaches, fresh | .0199 | .0116 | .0132 | .0171 | .0190 |
| | 126 | Watermelons | .0076 | .0031 | .0096 | .0112 | .0127 |
| | 127 | Fruits, fresh, domestic | .0100 | .0095 | .0091 | .0102 | .0162 |
| | 128 | Fruits, fresh, tropical | .0109 | .0120 | .0106 | .0117 | .0113 |
| | 130 | Potatoes, other than sweet | .0094 | .0115 | .0090 | .0078 | .0083 |
| | 140 | Cabbage | .0095 | .0099 | .0148 | .0075 | .0131 |
| | 141 | Onions | .0085 | .0086 | .0113 | .0085 | .0114 |
| | 142 | Tomatoes | .0108 | .0097 | .0135 | .0101 | .0146 |
| | 143 | Vegetables, fresh, N.O.S. | .0098 | .0090 | .0138 | .0094 | .0155 |
| 04 | | Perishables | .0097 | .0092 | .0116 | .0094 | .0130 |
| | 150 | Beans and peas, dried | .0081 | .0095 | .0096 | .0073 | .0076 |
| | 151 | Fruits, dried or evaporated | .0084 | .0062 | .0085 | .0085 | .0060 |
| | 152 | Vegetables, dry, N.O.S. | .0096 | .0107 | .0097 | .0088 | .0088 |
| | 161 | Peanuts | .0116 | .0116 | .0127 | .0095 | .0102 |
| | 164 | Products of Agriculture | .0081 | .0070 | .0089 | .0095 | .0059 |
| | 282 | Animal products, N.O.S. | .0120 | .0121 | .0114 | .0125 | .0100 |
| | 640 | Fertilizers, N.O.S. | .0056 | .0055 | .0062 | .0064 | .0061 |
| 05 | | Miscellaneous Farm Products | .0080 | .0081 | .0087 | .0078 | .0071 |
| | 170 | Horses, mules, ponies | .0162 | .0204 | .0169 | .0136 | .0173 |
| | 180 | Cattle and calves,single-deck | .0099 | .0093 | .0137 | .0101 | |
| | 181 | Calves, double-deck | .0114 | .0126 | .0118 | .0095 | - |
| | 190 | Sheep and goats,single-deck | .0098 | .0102 | .0173 | .0093 | .0170 |
| | 191 | Sheep and goats,double-deck | .0101 | .0094 | .0169 | .0104 | .0160 |
| | 200 | Hogs, single-deck | .0120 | .0096 | .0157 | .0145 | .0157 |
| | 201 | Hogs, double-deck | .0092 | .0086 | .0159 | .0107 | .0119 |
| | 230 | Poultry, live | .0209 | .0196 | .0252 | .0218 | .0262 |
| | 260 | Wool | .0130 | .0137 | .0138 | .0119 | .0129 |
| | 270 | Hides, green | .0095 | .0091 | .0102 | .0111 | .0085 |
| 06 | 281 | Animals, live, N.O.S. | .0147 | .0157 | .0128 | .0154 | .0106 |
| | | Live Animals | .0109 | .0104 | .0149 | .0110 | .0140 |
| | 210 | Fresh meats, N.O.S. | .0129 | .0128 | .0159 | .0108 | .0109 |
| | 220 | Meats, cured, dried | .0123 | .0105 | .0137 | .0155 | .0099 |
| | 221 | Butterine and margarine | .0192 | .0184 | .0216 | .0187 | .0163 |
| | 222 | Packing-house products | .0112 | .0092 | .0138 | .0130 | .0107 |
| | 231 | Poultry, dressed | .0178 | .0180 | .0208 | .0154 | .0121 |
| | 240 | Eggs | .0148 | .0158 | .0249 | .0131 | .0221 |
| | 250 | Butter | .0171 | .0174 | .0253 | .0162 | .0114 |
| | 251 | Cheese | .0166 | .0154 | .0201 | .0201 | .0154 |
| 07 | | Animal Products, Edible | .0139 | .0138 | .0156 | .0132 | .0115 |
| | 290 | Anthracite coal | .0064 | .0064 | .0065 | .0076 | .0080 |
| | 300 | Bituminous coal | .0048 | .0048 | .0047 | .0051 | .0049 |
| | 310 | Coke | .0064 | .0075 | .0051 | .0055 | .0048 |
| 08 | | Coal and Coke | .0050 | .0050 | .0048 | .0051 | .0049 |
| | 320 | Iron ore | .0048 | .0048 | .0060 | .0046 | .0044 |
| | 330 | Copper ore concentrates | .0088 | .0051 | .0160 | .0059 | .0042 |
| | 331 | Lead ore and concentrates | .0076 | .0056 | .0035 | .0083 | .0042 |
| | 332 | Zinc ore and concentrates | .0050 | .0070 | .0066 | .0052 | - |
| | 333 | Ores and concentrates, N.O.S. | .0050 | .0050 | .0049 | .0052 | .0054 |
| | 338 | Products of mines, N.O.S. | .0056 | .0051 | .0049 | .0053 | .0062 |
| 09 | | Ores | .0055 | .0060 | .0049 | .0052 | .0058 |
| | 350 | Gravel, sand, etc. | .0056 | .0056 | .0049 | .0057 | .0063 |
| | 351 | Stone, broken, ground, etc. | .0052 | .0046 | .0053 | .0058 | .0062 |
| | 352 | Stone, rough, N.O.S. | .0063 | .0056 | .0060 | .0065 | .0062 |
| | 353 | Stone, finished, N.O.S. | .0067 | .0071 | .0060 | .0065 | .0066 |
| 10 | | Sand, Stone and Gravel | .0057 | .0059 | .0049 | .0059 | .0062 |
| | 390 | Phosphate rock, crude, etc. | .0054 | .0077 | .0049 | .0049 | .0058 |
| | 391 | Sulphur (brimstone) | .0045 | .0050 | .0057 | .0043 | .0045 |
| | 661 | Sulphuric acid | .0063 | .0101 | .0066 | .0050 | .0092 |
| 11 | | Sulphur and Sulphuric Acid | .0050 | .0060 | .0057 | .0045 | .0058 |
| | 360 | Petroleum, crude | .0056 | .0077 | .0093 | .0055 | .0071 |
| | 370 | Asphalt (natural) etc. | .0077 | .0086 | .0079 | .0072 | .0071 |
| | 450 | Petroleum oils, refined,etc. | .0082 | .0102 | .0107 | .0074 | .0119 |
| | 451 | Fuel, road, residual oils | .0061 | .0090 | .0081 | .0056 | .0114 |
| | 452 | Lubricating oils and greases | .0091 | .0096 | .0010 | .0082 | .0088 |
| | 453 | Petroleum products, N.O.S. | .0080 | .0088 | .0096 | .0085 | .0093 |
| 12 | | Petroleum and Products | .0078 | .0099 | .0103 | .0070 | .0103 |
| | 400 | Logs | .0063 | .0073 | .0054 | .0065 | .0095 |
| | 401 | Posts, poles, and piling | .0063 | .0065 | .0057 | .0066 | .0057 |
| | 402 | Wood (fuel) | .0068 | .0074 | .0068 | .0066 | .0078 |
| | 410 | Ties, railroad | .0070 | .0066 | .0074 | .0076 | .0064 |
| | 420 | Pulpwood | .0077 | .0089 | .0053 | .0079 | .0059 |
| | 430 | Lumber, shingles, and lath | .0056 | .0063 | .0053 | .0058 | .0072 |
| | 431 | Box, crate, and cooperage | .0065 | .0066 | .0067 | .0063 | .0067 |
| | 432 | Veneer and built-up wood | .0061 | .0063 | .0063 | .0059 | .0080 |
| | 442 | Crude rubber (unreclaimed) | .0100 | .0100 | .0095 | .0108 | .0080 |
| | 443 | Products of forests,N.O.S. | .0083 | .0086 | .0077 | .0078 | .0079 |
| 13 | | Forest Products | .0058 | .0066 | .0055 | .0059 | .0070 |
| | 100 | Cottonseed | .0101 | .0124 | .0094 | .0106 | .0149 |
| | 101 | Cottonseed meal and cake | .0057 | .0048 | .0058 | .0073 | .0051 |
| | 160 | Vegetable - oil cake, etc. | .0058 | .0061 | .0048 | .0075 | .0065 |
| | 460 | Cottonseed oil | .0078 | .0092 | .0083 | .0081 | .0101 |
| | 461 | Linseed oil | .0091 | .0094 | .0158 | .0077 | .0120 |
| | 462 | Vegetable oils, N.O.S. | .0053 | .0068 | .0049 | .0056 | .0070 |
| | 280 | Fish or sea-animal oil | .0054 | .0081 | .0055 | .0047 | .0102 |
| 14 | | Oils - Vegetable and Animal | .0062 | .0060 | .0069 | .0068 | .0053 |
| | 490 | Iron, pig | .0069 | .0052 | .0054 | .0058 | .0056 |
| | 491 | Iron and steel, 6th Class | .0082 | .0081 | .0016 | .0097 | .0077 |
| | 500 | Nails, fastenings, frogs | .0060 | .0085 | .0075 | .0064 | .0151 |
| | 510 | Cast-iron pipe and fittings | .0087 | .0088 | .0086 | .0059 | .0086 |
| | 511 | Iron and steel pipe,fittings | .0101 | .0087 | .0086 | .0114 | .0094 |
| | 512 | Iron and steel: Nails, wire | .0099 | .0092 | .0111 | .0108 | .0062 |
| | 513 | Iron and steel, 5th Class | .0088 | .0093 | .0109 | .0076 | .0077 |
| | 585 | Railway car wheels, axles | .0099 | .0097 | .0132 | .0088 | .0122 |
| | 692 | Furnace slag | .0056 | .0065 | .0034 | .0051 | .0078 |
| | 693 | Scrap iron and scrap steel | .0071 | .0073 | .0053 | .0078 | .0092 |
| 15 | | Iron and Steel | .0087 | .0088 | .0085 | .0095 | .0092 |
| | 520 | Copper: Ingot, matte, pig | .0053 | .0073 | .0025 | .0052 | .0054 |
| | 521 | Copper, brass, and bronze | .0097 | .0104 | .0157 | .0063 | .0157 |
| | 522 | Lead and zinc: Ingot, Bar | .0045 | .0062 | .0042 | .0046 | .0059 |
| | 523 | Aluminum: Ingot, pig, slab | .0123 | .0121 | .0132 | .0208 | .0089 |
| 16 | | All Other Metals | .0051 | .0056 | .0055 | .0049 | .0051 |
| | 530 | Machinery and boilers | .0115 | .0097 | .0149 | .0128 | .0105 |
| | 580 | Agricultural implements,etc. | .0123 | .0097 | .0140 | .0143 | .0090 |
| | 581 | Vehicles, horse-drawn, etc. | .0141 | .0107 | .0203 | .0170 | .0099 |
| | 582 | Tractors and parts | .0117 | .0118 | .0147 | .0117 | .0073 |
| | 590 | Automobiles (passenger) | .0283 | .0256 | .0349 | .0299 | .0279 |
| | 591 | Autotrucks | .0227 | .0181 | .0286 | .0258 | .0189 |
| | 592 | Automobiles, K.D. and parts | .0123 | .0110 | .0134 | .0134 | .0181 |
| | 593 | Automobile tires | .0137 | .0128 | .0200 | .0131 | .0167 |
| | 610 | Furniture, metal | .0130 | .0118 | .0137 | .0146 | .0145 |
| | 611 | Furniture, not metal | .0173 | .0166 | .0144 | .0176 | .0184 |
| 17 | 697 | Building woodwork (millwork) | .0058 | .0066 | .0075 | .0055 | .0077 |
| | | Appliances | .0152 | .0138 | .0173 | .0160 | .0173 |
| | 540 | Cement, building | .0085 | .0100 | .0066 | .0074 | .0062 |
| | 550 | Brick, common | .0061 | .0061 | .0052 | .0067 | .0073 |
| | 551 | Brick, and building tile | .0058 | .0061 | .0055 | .0053 | .0064 |
| | 552 | Artificial stone, N.O.S. | .0075 | .0075 | .0093 | .0067 | .0060 |
| | 560 | Lime, common (quick slaked) | .0062 | .0065 | .0053 | .0069 | .0050 |
| | 561 | Plaster (stucco or wall) etc. | .0063 | .0070 | .0057 | .0053 | .0070 |
| 18 | | Building Material | .0074 | .0081 | .0061 | .0067 | .0062 |
| | 580 | Salt | .0065 | .0061 | .0062 | .0067 | .0063 |
| | 470 | Sugar (beet or cane) | .0066 | .0106 | .0058 | .0095 | .0059 |
| | 471 | Table syrups and molasses | .0075 | .0079 | .0082 | .0068 | .0079 |
| | 472 | Molasses, blackstrap, etc. | .0052 | .0086 | .0043 | .0057 | - |
| | 620 | Beverages | .0087 | .0100 | .0089 | .0074 | .0094 |
| | 630 | Ice | .0114 | .0206 | .0077 | .0098 | - |
| | 680 | Canned food products | .0085 | .0085 | .0125 | .0081 | .0059 |
| 19 | | Manufactured Food | .0078 | .0079 | .0083 | .0079 | .0060 |
| | 650 | Newsprint paper | .0074 | .0081 | .0076 | .0061 | .0079 |
| | 651 | Printing paper, N.O.S. | .0071 | .0066 | .0107 | .0079 | .0102 |
| | 694 | Paper bags, wrapping paper | .0084 | .0090 | .0095 | .0078 | .0080 |
| | 695 | Paperboard, wallboard | .0078 | .0079 | .0078 | .0082 | .0066 |
| | 696 | Building paper and roofing | .0087 | .0084 | .0101 | .0081 | .0086 |
| 20 | | Paper and Products | .0077 | .0080 | .0083 | .0069 | .0086 |
| | 640 | Rosin | .0069 | .0075 | .0068 | .0063 | .0058 |
| | 441 | Turpentine | .0099 | .0086 | .0111 | .0083 | .0095 |
| | 660 | Alcohol, denatured or wood | .0092 | .0102 | .0087 | .0079 | .0139 |
| | 662 | Explosives, N.O.S. | .0850 | .0837 | .0829 | .0895 | .0823 |
| | 691 | Paints, oil and varnishes | .0098 | .0095 | .0155 | .0082 | .0154 |
| 21 | | Chemicals | .0103 | .0112 | .0088 | .0107 | .0113 |
| | 271 | Leather | .0115 | .0112 | .0129 | .0114 | .0106 |
| | 670 | Cotton cloth and fabrics | .0139 | .0140 | .0141 | .0146 | .0125 |
| | 671 | Bagging and bags | .0103 | .0090 | .0122 | .0111 | .0054 |
| 22 | | Textiles and Leather | .0128 | .0118 | .0139 | .0123 | .0108 |
| | 570 | Sewer pipe and drainage | .0073 | .0067 | .0080 | .0096 | .0080 |
| | 699 | Glass, flat, not plate | .0104 | .0112 | .0179 | .0088 | .0112 |
| | 700 | Glass: Bottles, jars, etc. | .0073 | .0050 | .0139 | .0117 | .0097 |
| 23 | | Glass and Tile | .0076 | .0056 | .0139 | .0109 | .0097 |
| | 690 | Tobacco, manufactured | .0134 | .0156 | .0146 | .0119 | .0159 |
| | 698 | Soap and washing compounds | .0104 | .0104 | .0104 | .0123 | .0057 |
| | 701 | Manufactures miscellaneous | .0096 | .0093 | .0107 | .0100 | .0088 |
| 24 | | Miscellaneous | .0097 | .0093 | .0109 | .0101 | .0089 |



SECTION 45. PRESENT CLASSIFICATION

Analysis 45.16 Average Revenue of Railway Intermediate Traffic, per Loaded Car Mile - 1932

| GROUP NO. | ICC NO. | COMMODITY | UNITED STATES | EAST-ERN | SOUTH-ERN | WEST-ERN | POCA-HONTAS |
|---|---|---|---|---|---|---|---|
| | | | $ .18 | $ .20 | $ .19 | $ .16 | $ .20 |
| | 10 | Wheat | .27 | .20 | .28 | .32 | .30 |
| | 20 | Corn | .21 | .22 | .25 | .20 | .24 |
| | 30 | Oats | .17 | .15 | .20 | .23 | .14 |
| | 40 | Barley and rye | .23 | .18 | .23 | .31 | .16 |
| | 162 | Flaxseed | .24 | .13 | .18 | .34 | .22 |
| | 163 | Sugar beets | .30 | 1.04 | .03 | .30 | - |
| 01 | | Bulk Grain and Beets | .22 | .19 | .26 | .25 | .25 |
| | 41 | Rice | .15 | .22 | .17 | .13 | .19 |
| | 42 | Grain, N.O.S. | .18 | .16 | .52 | .23 | .39 |
| | 50 | Flour, wheat | .15 | .14 | .16 | .16 | .12 |
| | 51 | Meal, corn | .14 | .13 | .12 | .18 | .11 |
| | 52 | Flour and meal | .14 | .14 | .12 | .18 | .10 |
| | 60 | Cereal food preparations | .13 | .13 | .19 | .12 | .15 |
| | 61 | Mill products, N.O.S. | .13 | .12 | .14 | .16 | .12 |
| 02 | | Other Cereals | .14 | .13 | .15 | .15 | .12 |
| | 70 | Hay and alfalfa | .10 | .11 | .09 | .12 | .11 |
| | 71 | Straw | .14 | .15 | .08 | .26 | .28 |
| | 80 | Tobacco, leaf | .15 | .16 | .14 | .21 | .14 |
| | 90 | Cotton in bales | .16 | .11 | .15 | .25 | .10 |
| | 91 | Cotton linters, noils | .13 | .10 | .14 | .21 | .16 |
| 03 | | Cotton, Hay and Tobacco | .14 | .11 | .17 | .22 | .13 |
| | 110 | Oranges and grapefruit | .17 | .15 | .20 | .16 | .24 |
| | 111 | Lemons, limes, and citrus | .13 | .10 | .15 | .14 | .24 |
| | 120 | Apples, fresh | .15 | .14 | .16 | .16 | .16 |
| | 121 | Bananas | .20 | .20 | .19 | .20 | .39 |
| | 122 | Berries, fresh | .20 | .17 | .19 | .19 | .29 |
| | 125 | Cantaloupes and melons | .10 | .10 | .11 | .10 | .20 |
| | 124 | Grapes, fresh | .13 | .11 | .12 | .13 | .18 |
| | 125 | Peaches, fresh | .19 | .16 | .15 | .22 | .21 |
| | 126 | Watermelons | .10 | .04 | .12 | .14 | .14 |
| | 127 | Fruits, fresh, domestic | .13 | .13 | .12 | .14 | .24 |
| | 128 | Fruits, fresh, tropical | .14 | .17 | .13 | .17 | .15 |
| | 130 | Potatoes, other than sweet | .16 | .22 | .16 | .12 | .12 |
| | 140 | Cabbage | .12 | .13 | .18 | .10 | .16 |
| | 141 | Onions | .11 | .11 | .14 | .11 | .15 |
| | 142 | Tomatoes | .12 | .11 | .14 | .11 | .17 |
| | 143 | Vegetables, fresh, N.O.S. | .11 | .10 | .16 | .11 | .18 |
| 04 | | Perishables | .13 | .13 | .16 | .13 | .19 |
| | 150 | Beans and peas, dried | .22 | .24 | .24 | .20 | .18 |
| | 151 | Fruits, dried or evaporated | .28 | .23 | .29 | .29 | .12 |
| | 152 | Vegetables, dry, N.O.S. | .14 | .16 | .14 | .15 | .14 |
| | 161 | Peanuts | .17 | .17 | .19 | .18 | .14 |
| | 164 | Products of agriculture | .17 | .15 | .18 | .19 | .14 |
| | 282 | Animal products, N.O.S. | .23 | .22 | .19 | .26 | .17 |
| | 640 | Fertilizers, N.O.S. | .18 | .20 | .18 | .18 | .17 |
| 05 | | Miscellaneous Farm Products | .19 | .19 | .19 | .21 | .15 |
| | 170 | Horses, mules, ponies | .20 | .24 | .22 | .16 | .28 |
| | 180 | Cattle and calves,single-deck | .11 | .10 | .14 | .11 | .16 |
| | 181 | Calves, double-deck | .13 | .13 | .17 | .11 | - |
| | 190 | Sheep and goats, single-deck | .08 | .09 | .16 | .08 | .13 |
| | 191 | Sheep and goats, double-deck | .09 | .08 | .16 | .09 | .21 |
| | 200 | Hogs, single-deck | .11 | .09 | .17 | .11 | .27 |
| | 201 | Hogs, double-deck | .11 | .10 | .19 | .13 | .13 |
| | 230 | Poultry, live | .17 | .15 | .20 | .20 | .23 |
| | 260 | Wool | .19 | .18 | .22 | .20 | .19 |
| | 270 | Hides, green | .21 | .21 | .24 | .23 | .17 |
| | 281 | Animals, live, N.O.S. | .23 | .20 | .29 | .59 | .18 |
| 06 | | Live Animals | .12 | .12 | .20 | .12 | .19 |
| | 210 | Fresh meats, N.O.S. | .16 | .15 | .21 | .17 | .14 |
| | 220 | Meats, cured, dried | .19 | .16 | .20 | .27 | .15 |
| | 221 | Butterine and margarine | .23 | .22 | .28 | .35 | .15 |
| | 222 | Packing-house products | .20 | .17 | .22 | .25 | .16 |
| | 231 | Poultry, dressed | .20 | .20 | .25 | .18 | .19 |
| | 240 | Eggs | .19 | .19 | .27 | .19 | .23 |
| | 250 | Butter | .20 | .21 | .29 | .17 | .26 |
| | 251 | Cheese | .23 | .21 | .27 | .30 | .21 |
| 07 | | Animal Products, Edible | .18 | .17 | .22 | .20 | .16 |
| | 290 | Anthracite coal | .28 | .28 | .31 | .24 | .30 |
| | 300 | Bituminous coal | .23 | .26 | .24 | .10 | .25 |
| | 310 | Coke | .20 | .23 | .16 | .18 | .14 |
| 08 | | Coal and Coke | .23 | .26 | .23 | .10 | .25 |
| | 320 | Iron ore | .36 | .37 | .42 | .28 | .12 |
| | 330 | Copper ore concentrates | .18 | .39 | .09 | .32 | .15 |
| | 331 | Lead ore and concentrates | .34 | .33 | .17 | .36 | .05 |
| | 332 | Zinc ore and concentrates | .32 | .37 | .34 | .28 | - |
| | 333 | Ores and concentrates | .23 | .20 | .25 | .28 | .27 |
| | 338 | Products of mines, N.O.S. | .21 | .23 | .18 | .20 | .21 |
| 09 | | Ores | .22 | .25 | .19 | .22 | .22 |
| | 350 | Gravel, sand, etc. | .29 | .23 | .25 | .38 | .22 |
| | 351 | Stone, broken, ground, etc. | .23 | .19 | .25 | .25 | .21 |
| | 352 | Stone, rough, N.O.S. | .19 | .22 | .13 | .24 | .19 |
| | 353 | Stone, finished, N.O.S. | .19 | .19 | .19 | .19 | .15 |
| 10 | | Sand, Stone and Gravel | .22 | .21 | .18 | .28 | .17 |
| | 390 | Phosphate rock, crude, etc. | .27 | .34 | .24 | .41 | .27 |
| | 391 | Sulphur (brimstone) | .19 | .21 | .25 | .18 | .28 |
| | 661 | Sulphuric acid | .30 | .33 | .34 | .24 | .23 |
| 11 | | Sulphur and Sulphuric Acid | .22 | .25 | .28 | .19 | .28 |
| | 360 | Petroleum, crude | .19 | .24 | .31 | .19 | .05 |
| | 370 | Asphalt (natural) etc. | .25 | .25 | .28 | .26 | .24 |
| | 450 | Petroleum oils, refined | .22 | .28 | .28 | .20 | .32 |
| | 451 | Fuel, road, residual oils | .18 | .28 | .24 | .17 | .33 |
| | 452 | Lubricating oils and greases | .19 | .21 | .19 | .18 | .16 |
| | 453 | Petroleum products, N.O.S. | .20 | .22 | .16 | .20 | .20 |
| 12 | | Petroleum and Products | .21 | .23 | .27 | .19 | .25 |
| | 400 | Logs | .20 | .24 | .17 | .24 | .10 |
| | 401 | Posts, poles, and piling | .17 | .18 | .19 | .16 | .16 |
| | 402 | Wood (fuel) | .23 | .26 | .21 | .23 | .32 |
| | 410 | Ties, railroad | .24 | .25 | .21 | .26 | .19 |
| | 420 | Pulpwood | .21 | .24 | .14 | .22 | .16 |
| | 430 | Lumber, shingles, and lath | .14 | .14 | .15 | .13 | .17 |
| | 431 | Box, crate, and cooperage | .14 | .14 | .14 | .14 | .15 |
| | 432 | Veneer and built-up wood | .13 | .14 | .10 | .14 | .17 |
| | 442 | Crude rubber (unreclaimed) | .38 | .38 | .44 | .44 | .28 |
| | 443 | Products of forests, N.O.S. | .14 | .14 | .14 | .13 | .14 |
| 13 | | Forest Products | .14 | .15 | .13 | .15 | .16 |
| | 100 | Cottonseed | .27 | .39 | .23 | .39 | .25 |
| | 101 | Cottonseed meal and cake | .13 | .11 | .13 | .17 | .07 |
| | 160 | Vegetable - oil cake, etc. | .14 | .15 | .10 | .22 | .17 |
| | 460 | Cottonseed oil | .17 | .19 | .14 | .24 | .29 |
| | 461 | Linseed oil | .22 | .21 | .40 | .21 | .40 |
| | 462 | Vegetable oils, N.O.S. | .16 | .18 | .14 | .15 | .21 |
| | 280 | Fish or sea-animal oil | .16 | .17 | .20 | .14 | .35 |
| 14 | | Oils - Vegetable and Animal | .15 | .15 | .14 | .17 | .13 |
| | 490 | Iron, pig | .26 | .26 | .28 | .20 | .31 |
| | 491 | Iron and steel, 6th Class | .59 | .58 | .54 | 1.03 | .20 |
| | 500 | Nails, fastenings, etc. | .21 | .25 | .25 | .17 | .44 |
| | 510 | Cast-iron pipe and fittings | .20 | .19 | .21 | .23 | .19 |
| | 511 | Iron and steel pipe, fittings | .30 | .24 | .24 | .37 | .37 |
| | 512 | Iron and steel: Nails, wire | .25 | .22 | .26 | .33 | .17 |
| | 513 | Iron and steel, 5th Class | .27 | .26 | .29 | .28 | .25 |
| | 585 | Railway car wheels, axles | .26 | .17 | .29 | .35 | .35 |
| | 692 | Furnace slag | .18 | .25 | .17 | .52 | .25 |
| | 693 | Scrap iron and scrap steel | .28 | .27 | .24 | .35 | .37 |
| 15 | | Iron and Steel | .27 | .25 | .25 | .30 | .23 |
| | 520 | Copper: Ingot, matte, pig | .26 | .29 | .14 | .26 | .22 |
| | 521 | Copper, brass, and bronze | .21 | .19 | .43 | .30 | .13 |
| | 522 | Lead and zinc: Ingot, Bar | .21 | .19 | .20 | .23 | .14 |
| | 523 | Aluminum: Ingot, pig, slab | .42 | .35 | .36 | .95 | .24 |
| 16 | | All Other Metals | .24 | .21 | .26 | .25 | .18 |
| | 530 | Machinery and boilers | .20 | .16 | .23 | .26 | .16 |
| | 580 | Agricultural implements, etc. | .20 | .16 | .24 | .23 | .15 |
| | 581 | Vehicles, horse-drawn, etc. | .22 | .15 | .27 | .28 | .20 |
| | 582 | Tractors and parts | .22 | .17 | .23 | .24 | .11 |
| | 590 | Automobiles (passenger) | .17 | .16 | .21 | .18 | .20 |
| | 591 | Autotrucks | .18 | .15 | .21 | .21 | .13 |
| | 592 | Automobiles, K.D. and parts | .23 | .20 | .26 | .27 | .23 |
| | 593 | Automobile tires | .20 | .17 | .25 | .21 | .20 |
| | 610 | Furniture, metal | .16 | .14 | .16 | .19 | .12 |
| | 611 | Furniture, not metal | .13 | .13 | .12 | .14 | .13 |
| 17 | 697 | Building woodwork (millwork) | .12 | .12 | .16 | .12 | .15 |
| | | Appliances | .18 | .16 | .20 | .20 | .16 |
| | 540 | Cement, building | .51 | .53 | .23 | .52 | .20 |
| | 550 | Brick, common | .21 | .21 | .19 | .23 | .26 |
| | 551 | Brick and building tile | .19 | .21 | .16 | .18 | .23 |
| | 552 | Artificial stone, N.O.S. | .24 | .24 | .21 | .22 | .19 |
| | 560 | Lime, common (quick, slaked) | .15 | .15 | .14 | .18 | .10 |
| | 561 | Plaster (stucco or wall) etc. | .18 | .19 | .18 | .17 | .20 |
| 18 | | Building Material | .24 | .26 | .19 | .24 | .18 |
| | 580 | Salt | .16 | .16 | .16 | .18 | .16 |
| | 470 | Sugar (beet or cane) | .26 | .27 | .24 | .27 | .18 |
| | 471 | Table syrups and molasses | .24 | .29 | .21 | .22 | .20 |
| | 472 | Molasses, blackstrap, etc. | .23 | .32 | .20 | .25 | - |
| | 620 | Beverages | .17 | .17 | .18 | .17 | .17 |
| | 630 | Ice | .84 | .82 | .23 | .36 | - |
| | 680 | Canned food products | .21 | .19 | .26 | .24 | .14 |
| 19 | | Manufactured Food | .21 | .19 | .20 | .21 | .16 |
| | 650 | Newsprint paper | .19 | .21 | .19 | .16 | .17 |
| | 651 | Printing paper, N.O.S. | .21 | .20 | .24 | .19 | .26 |
| | 694 | Paper bags and wrapping paper | .19 | .19 | .18 | .18 | .18 |
| | 695 | Paperboard, wallboard | .17 | .16 | .16 | .19 | .15 |
| | 696 | Building paper and roofing | .19 | .18 | .22 | .19 | .20 |
| 20 | | Paper and Products | .19 | .20 | .18 | .18 | .18 |
| | 640 | Rosin | .17 | .18 | .16 | .17 | .15 |
| | 441 | Turpentine | .26 | .23 | .28 | .23 | .26 |
| | 660 | Alcohol, denatured or wood | .22 | .23 | .23 | .20 | .35 |
| | 662 | Explosives, N.O.S. | .36 | .30 | .40 | .34 | .33 |
| | 691 | Paints, oil and varnishes | .26 | .21 | .33 | .29 | .61 |
| 21 | | Chemicals | .24 | .23 | .21 | .29 | .28 |
| | 271 | Leather | .20 | .20 | .24 | .29 | .15 |
| | 670 | Cotton cloth and fabrics | .14 | .13 | .13 | .23 | .13 |
| | 671 | Bagging and bags | .19 | .16 | .20 | .23 | .12 |
| 22 | | Textiles and Leather | .15 | .16 | .14 | .23 | .13 |
| | 570 | Sewer pipe and drainage | .12 | .12 | .12 | .15 | .12 |
| | 699 | Glass, flat, not plate | .30 | .28 | .31 | .29 | .29 |
| | 700 | Glass: Bottles, jars, etc. | .17 | .15 | .25 | .20 | .17 |
| 23 | | Glass and Tile | .17 | .15 | .23 | .21 | .18 |
| | 690 | Tobacco, manufactured | .25 | .26 | .27 | .24 | .27 |
| | 698 | Soap and washing compounds | .22 | .21 | .22 | .26 | .11 |
| | 701 | Manufactures miscellaneous | .20 | .19 | .22 | .21 | .17 |
| 24 | | Miscellaneous | .20 | .19 | .23 | .21 | .17 |

SECTION 45. PRESENT CLASSIFICATIONS

Analysis 45.17 Traffic Statistics and Unit Revenues (Total, Terminal and Line) of All Commodities and Rough Material - 1932

| RATING GROUP / STATISTICAL GROUP | PERCENTAGES OF ALL TRAFFIC: REVENUE | TONS | EQUATED TON MILES | AVERAGES HAUL: MILES | LOAD: NET TONS | EQUATED TONS | REVENUES PER TON | TOTAL TERMINAL LINE PER EQUATED TON | PER EQUATED TON-MILE | VALUE PER TON # |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 100.00% | 100.00% | 100.00% | 353 | 34.5 | 56 | $3.64 | $ .63 | $.00415 | $31.88 |
| I ROUGH MATERIAL | 2.75% | 10.04% | 2.16% | 92 | 48 | 68 | $ .99 | $ .52 | $.00194 | $ 1.59 |
| 10 Sand, Stone, Gravel | 1.78% | 7.39% | 1.28% | 79 | 55 | 76 | $ .87 | $ .46 | $.00218 | $ .81 |
| 100 Gravel, Sand | 1.04 | 4.57 | .70 | 70 | 56 | 77 | .82 | .46 | .00196 | .49 |
| 101 Crushed Stone | .59 | 2.42 | .46 | 86 | 55 | 76 | .89 | .46 | .00216 | .64 |
| 102 Rough Stone, NOSH | .15 | .40 | .12 | 136 | 50 | 67 | 1.36 | .53 | .00356 | 5.46 |
| 109 Sand, Stone, Gravel, NOSH | - | - | - | - | - | - | - | - | - | - |
| 11 Timber | .82% | 1.79% | .79% | 170 | 32 | 51 | $1.65 | $ .70 | $.00202 | $ 3.04 |
| 110 Logs | .13 | .83 | .11 | 56 | 35 | 52 | .59 | .39 | - | 3.05 |
| 111 Posts, Poles, Piling | .33 | .24 | .32 | 505 | 27 | 44 | 4.84 | .80 | .00429 | 2.90 |
| 112 Ties | .12 | .13 | .11 | 313 | 31 | 52 | 3.30 | .68 | .00415 | 7.62 |
| 113 Pulpwood | .20 | .55 | .21 | 149 | 33 | 54 | 1.33 | .66 | .00101 | 1.99 |
| 119 Timber, NOSH | .04 | .04 | .04 | 322 | 20 | 40 | 3.61 | .87 | .00319 | 3.07 |
| 12 Rough Vegetables | .15% | .86% | .09% | 47 | 45 | 66 | $ .64 | $ .44 | - | $ 5.32 |
| 120 Sugar Beets | .15 | .86 | .09 | 47 | 45 | 66 | .64 | .44 | - | 5.32 |
| 121 Sugar Cane | - | - | - | - | - | - | - | - | - | - |
| 129 Rough Vegetables, NOSH | - | - | - | - | - | - | - | - | - | - |
| 19 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |

AGGREGATE STATISTICS USED IN ANALYSES 45.17 - 45.24

| | REVENUES ∮ TOTAL (000) | TERMINAL PER CAR | CARS ORIGINATED (000) | REVENUE TONS ORIGINATED (000) | REVENUE TON MILES (000,000) | EQUATED TON MILES (000,000) |
|---|---|---|---|---|---|---|
| UNITED STATES | $2,278,377 | $ 35.26 | 18,147 | 626,078 | 220,994 | 394,617 |
| EASTERN | 976,618 | 31.32 | - | - | 91,881 | - |
| POCAHONTAS | 161,472 | 29.94 | - | - | 26,302 | - |
| SOUTHERN | 275,939 | 36.54 | - | - | 26,110 | - |
| WESTERN | 864,348 | 42.18 | - | - | 76,701 | - |

* Included in Statistical Group No.59, Analysis 45.5

# I.C.C. value at point of production, or from studies by Section of Transportation Service. All statistics except value of Commodities (which are for 1933) based on returns to Carload Traffic Survey, Form 110, year 1932.

∮ Line Revenues - Total Revenues less Terminal Revenues.



SECTION 45. PRESENT CLASSIFICATIONS

Analysis 45.18 Traffic Statistics and Unit Revenues (Total, Terminal and Line) of Raw Materials - 1932

| RATING GROUP / STATISTICAL GROUP | PERCENTAGES OF ALL TRAFFIC: REVENUE | TONS | EQUATED TON MILES | AVERAGES HAUL: MILES | LOAD: NET TONS | EQUATED TONS | REVENUES PER TON | TOTAL TERMINAL LINE PER EQUATED TON | PER EQUATED TON-MILE | VALUE PER TON # |
|---|---|---|---|---|---|---|---|---|---|---|
| II RAW MATERIAL | 52.80% | 62.92% | 59.49% | 357 | 43 | 64 | $ 3.05 | $ .56 | $.00366 | $ 8.41 |
| II RAW MATERIAL, INCLUDING GROUP 44 | 54.60% | 64.54% | 62.25% | 362 | 40 | 62 | $ 3.08 | $ .57 | $.00361 | $ - |
| 20 Grain | 5.34% | 6.05% | 4.37% | 303 | 40 | 60 | $ 3.21* | $ .58 | $.00509 | $19.31 |
| 200 Wheat | 2.92 | 3.18 | 2.35 | 319 | 44 | 65 | 3.34 | .54 | .00346 | 21.57 |
| 201 Corn | 1.31 | 1.56 | 1.08 | 291 | 40 | 61 | 3.07 | .58 | .00501 | 11.14 |
| 202 Oats | .47 | .56 | .48 | 329 | 32 | 53 | 3.05 | .67 | .00362 | 15.08 |
| 203 Barley and Rye | .20 | .25 | .17 | 277 | 39 | 60 | 2.93 | .59 | .00423 | 18.24 |
| 204 Rice | .11 | .10 | .08 | 320 | 27 | 48 | 4.18 | .74 | .00518 | 52.57 |
| 205 Cottonseed | .17 | .28 | .08 | 101 | 27 | 48 | 2.15 | .74 | .00486 | 13.08 |
| 206 Flaxseed | .05 | .05 | .03 | 304 | 38 | 59 | 3.81 | .60 | .00618 | 52.84 |
| 207 Seed, NOSH | .09 | .06 | .08 | 427 | 24 | 45 | 5.01 | .79 | .00452 | 101.24 |
| 209 Grain, NOSH | .02 | .01 | .02 | 505 | 28 | 48 | 4.76 | .73 | .00398 | 22.13 |
| 21 Animal Feeds | 1.22% | 1.35% | 1.70% | 418 | 23 | 43 | $ 3.31 | $ .81 | $.00220 | $16.93 |
| 210 Mill Products, Mixed Feeds | .79 | .99 | 1.24 | 408 | 22 | 43 | 2.88 | .82 | .00166 | 16.51 |
| 211 Cottonseed, Meal and Cake | .27 | .23 | .31 | 461 | 25 | 45 | 4.23 | .78 | .00332 | 17.29 |
| 212 Meal and Cake, NOSH | .04 | .05 | .05 | 399 | 25 | 45 | 3.40 | .78 | .00272 | 23.58 |
| 219 Animal Feeds, NOSH | .12 | .08 | .10 | 433 | 23 | 44 | 5.56 | .80 | .00500 | 16.93 |
| 22 Fresh Vegetables | 8.08% | 1.30% | 10.81% | 1761 | 14 | 41 | $22.59 | $ .85 | $.00383 | $16.05 |
| 220 Citrus Fruits | 2.36 | .32 | 2.85 | 2154 | 17 | 45 | 26.58 | .78 | .00443 | 34.58 |
| 221 Grapes | .85 | .10 | 1.24 | 2597 | 14 | 42 | 29.97 | .84 | .00363 | 17.82 |
| 222 Apples | .89 | .22 | 1.11 | 1162 | 16 | 44 | 14.65 | .81 | .00397 | 27.26 |
| 223 Peaches | .18 | .04 | .17 | 843 | 13 | 41 | 15.33 | .86 | .00495 | 31.50 |
| 224 Melons | .58 | .11 | .91 | 1694 | 12 | 40 | 19.84 | .88 | .00314 | 16.19 |
| 225 Berries | .06 | .01 | .06 | 1200 | 10 | 38 | 24.96 | .93 | .00491 | 93.88 |
| 226 Tropical Fruits | .48 | .12 | .48 | 739 | 11 | 38 | 15.24 | .92 | .00456 | 31.45 |
| 227 Domestic Fruits, NOSH | .45 | .07 | .59 | 1754 | 14 | 42 | 22.16 | .84 | .00386 | 30.40 |
| 228 Tomatoes | .30 | .04 | .45 | 1893 | 11 | 39 | 25.22 | .91 | .00341 | 20.60 |
| 229 Fresh Vegetables, NOSH | 1.93 | .27 | 2.95 | 2062 | 12 | 39 | 26.48 | .90 | .00335 | 37.45 |
| 23 Live Animals | 3.32% | 1.65% | 3.27% | 448 | 11 | 31 | $ 7.34 | $1.15 | $.00332 | $77.28 |
| 230 Kine | 1.46 | .79 | 1.38 | 410 | 12 | 31 | 6.75 | 1.13 | .00338 | 68.51 |
| 231 Sheep and Goats | .43 | .18 | .52 | 605 | 10 | 29 | 8.76 | 1.20 | .00286 | 74.34 |
| 232 Swine | 1.18 | .62 | 1.17 | 421 | 11 | 30 | 6.85 | 1.16 | .00303 | 81.69 |
| 233 Poultry | .13 | .02 | .11 | 1207 | 9 | 31 | 27.24 | 1.14 | .00589 | 217.13 |
| 234 Draft (Horses, Mules, etc.) | .12 | .04 | .09 | 594 | 12 | 31 | 11.81 | 1.13 | .00559 | 122.88 |
| 239 Live Animals, NOSH | - | - | - | 340 | 11 | 30 | 7.78 | 1.16 | .00484 | 145.34 |
| 24 Dry Fuels | 27.04% | 43.47% | 30.77% | 318 | 51 | 72 | $ 2.26 | $ .49 | $.00353 | $ 1.97 |
| 240 Anthracite Coal | 4.75 | 8.78 | 3.43 | 174 | 51 | 72 | 1.96 | .49 | .00515 | 4.32 |
| 241 Bituminous Coal | 21.55 | 33.28 | 26.73 | 362 | 53 | 74 | 2.36 | .48 | .00334 | 1.24 |
| 242 Coke | .68 | 1.19 | .56 | 182 | 33 | 54 | 2.07 | .66 | .00333 | 5.10 |
| 243 Wood (Fuel) | .06 | .22 | .05 | 89 | 30 | 51 | .98 | .58 | - | 1.56 |
| 249 Dry Fuels, NOSH | - | - | - | - | - | - | - | - | - | - |
| 25 Crude Liquids | 1.59% | 1.70% | 1.43% | 314 | 34 | 57 | $ 3.41 | $ .61 | $.00447 | $ 5.77 |
| 250 Petroleum, Crude | .38 | .43 | .46 | 403 | 34 | 58 | 3.23 | .61 | .00325 | 5.98 |
| 259 Fuel, Road, Oil, NOSH | 1.21 | 1.27 | .97 | 284 | 34 | 57 | 3.47 | .61 | .00505 | 5.70 |
| 26 Ores | 1.72% | 3.94% | 1.74% | 198 | 53 | 74 | $ 1.59 | $ .40 | $.00331 | $15.52 |
| 260 Iron | .89 | .94 | .87 | 134 | 61 | 82 | 1.11 | .43 | .00294 | 4.08 |
| 261 Copper | .02 | .32 | .02 | 30 | 55 | 76 | .28 | .09 | - | 5.28 |
| 262 Lead | .03 | .15 | .02 | 52 | 52 | 73 | .72 | .13 | .00666 | 24.63 |
| 263 Zinc | .08 | .13 | .10 | 352 | 49 | 70 | 2.31 | .50 | .00317 | 14.69 |
| 264 Sulphur | .12 | .23 | .12 | 245 | 55 | 76 | 1.95 | .47 | .00384 | 16.07 |
| 269 Ores, NOSH | 1.18 | 2.17 | 1.21 | 246 | 49 | 70 | 1.97 | .50 | .00359 | 21.35 |
| 27 Lumber | 3.63% | 2.19% | 4.62% | 737 | 25 | 46 | $ 6.04 | $ .77 | $.00349 | $19.62 |
| 270 Barrel, Crate & Cooperage | .49 | .27 | .53 | 636 | 23 | 43 | 6.51 | .82 | .00407 | 21.97 |
| 271 Lumber, Shingles and Lath | 2.98 | 1.83 | 3.87 | 747 | 26 | 47 | 5.93 | .76 | .00343 | 17.03 |
| 272 Veneers | .04 | .02 | .06 | 1225 | 23 | 43 | 9.10 | .82 | .00323 | 70.37 |
| 273 Millwork, Sash, Doors, etc. | .08 | .03 | .12 | 1449 | 18 | 39 | 10.92 | .91 | .00292 | 104.00 |
| 279 Lumber, NOSH | .04% | .04% | .04% | 322 | 20 | 41 | $ 3.81 | $ .87 | $.00319 | $33.70 |
| 28 Fertilizers | .86 | 1.27 | .78 | 226 | 31 | 52 | 2.45 | .68 | .00342 | 12.40 |
| 280 Phosphate Rock | .13 | .46 | .11 | 112 | 51 | 72 | 3.91 | .49 | .00193 | 2.99 |
| 289 Fertilizers, NOSH | .73% | .81% | .67% | 289 | 26 | 46 | $ 3.28 | $ .76 | $.00366 | $17.75 |
| 29 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |

* Included in Statistical Group No.59 - Analysis 45.21

# See footnote on Analysis 45.17

SECTION 45. PRESENT CLASSIFICATIONS

Analysis 45.19 Traffic Statistics and Unit Revenues (Total, Terminal and Line) of Semiprocessed Material - 1932

| RATING GROUP / STATISTICAL GROUP | PERCENTAGES OF ALL TRAFFIC REVENUE | TONS | EQUATED TON MILES | AVERAGES HAUL MILES | LOAD NET TONS | LOAD EQUATED TONS | REVENUES TOTAL PER TON | TERMINAL PER EQUATED TON | LINE PER EQUATED TON-MILE | VALUE PER TON # |
|---|---|---|---|---|---|---|---|---|---|---|
| III SEMIPROCESSED MATERIAL | 4.85% | 3.96% | 4.38% | 360 | 24 | 45 | $ 4.46 | $ 78 | $.00432 | $ 53.77 |
| 30 Primary Metals | .44% | .57% | .46% | 346 | 50 | 71 | $ 2.81 | $ .50 | $.00416 | $ 35.20 |
| 300 Iron and Steel - Ingots, Pigs | .21 | .44 | .15 | 153 | 53 | 74 | 1.73 | .48 | .00484 | 18.20 |
| 301 Copper - Ingot, Pig, Matte | .07 | .03 | .09 | 1181 | 43 | 64 | 8.39 | .55 | .00430 | 128.00 |
| 302 Lead and Zinc - Ingot, Pig, Slab | .15 | .10 | .21 | 953 | 42 | 63 | 5.83 | .56 | .00352 | 82.18 |
| 303 Aluminum - Ingot, Pig, Slab | .01 | .00 | .01 | 809 | 26 | 47 | 12.93 | .74 | .00801 | 444.67 |
| 309 Primary Metals, NOSH* | | | | | | | | | | |
| 31 Fibres | 1.91% | 1.01% | 1.69% | 421 | 13 | 34 | $ 6.87 | $1.04 | $.00402 | $119.84 |
| 310 Cotton (in bales) | .83 | .41 | .71 | 411 | 12 | 33 | 7.40 | 1.08 | .00410 | 170.00 |
| 311 Wool | .21 | .04 | .15 | 851 | 13 | 34 | 17.82 | 1.05 | .00694 | 540.32 |
| 312 Flax and Hemp | - | - | - | - | - | - | - | - | - | - |
| 313 Hair and Moss | - | - | - | - | - | - | - | - | - | - |
| 314 Jute | - | - | - | - | - | - | - | - | - | - |
| 315 Cordage, Shoddy, Linters, Noils, etc. | .08 | .04 | .09 | 692 | 18 | 39 | 7.35 | .91 | .00367 | 49.34 |
| 316 Leaf Tobacco | .22 | .10 | .17 | 367 | 11 | 31 | 8.08 | 1.13 | .00443 | 232.94 |
| 317 Hay, Alfalfa, Straw | .36 | .25 | .37 | 359 | 13 | 34 | 5.04 | 1.05 | .00251 | 6.78 |
| 318 Vegetable Fibres, NOSH | .17 | .13 | .16 | 427 | 24 | 45 | 5.01 | .79 | .00453 | 12.64 |
| 319 Fibres, NOSH | .04 | .04 | .04 | 322 | 20 | 41 | 3.81 | .87 | .00319 | 28.04 |
| 32 Hides | .23% | .10% | .18% | 593 | 23 | 43 | $ 8.55 | $ .82 | $.00620 | $195.83 |
| 320 Hides and Skins | .20 | .08 | .16 | 620 | 23 | 44 | 8.73 | .81 | .00615 | 195.83 |
| 329 Hides, NOSH | .03 | .02 | .02 | 457 | 21 | 41 | 7.64 | .85 | .00657 | 195.83 |
| 33 Rubber | .12% | .06% | .08% | 552 | 34 | 54 | $ 7.40 | $ .65 | $.00718 | $108.67 |
| 330 Crude Rubber | .12 | .06 | .08 | 552 | 34 | 54 | 7.40 | .65 | .00718 | 108.67 |
| 339 Rubber, NOSH | - | - | - | - | - | - | - | - | - | - |
| 34 Salt | .61% | .48% | .63% | 483 | 29 | 49 | $ 4.64 | $ .71 | $.00415 | $ 6.22 |
| (340 Salt, Rock ) | | | | | | | | | | |
| (341 Salt, Table (Common) ) | | | | | | | | | | |
| (349 Salt, NOSH ) | .61 | .48 | .63 | 483 | 29 | 49 | 4.64 | .71 | .00415 | 6.22 |
| 35 Ice | .07% | .24% | .04% | 50 | 27 | 55 | $ 1.15 | $ .57 | - | $ 4.37 |
| 350 Ice | .07 | .24 | .04 | 50 | 27 | 55 | 1.15 | .27 | - | 4.37 |
| 359 Ice, NOSH | - | - | - | - | - | - | - | - | - | - |
| 36 Primary Paper | .83% | .43% | .83% | 662 | 25 | 45 | $ 7.03 | $ .78 | $.00463 | $ 69.22 |
| 360 Newsprint | .50 | .26 | .52 | 708 | 26 | 47 | 7.00 | .76 | .00449 | 31.44 |
| 361 Building Paper | - | - | - | - | - | - | - | - | - | - |
| 362 Wrapping Paper and Paper Bags | .33 | .17 | .31 | 593 | 23 | 43 | 7.07 | .82 | .00486 | 127.00 |
| 363 Toilet and Tissue Paper* | - | - | - | - | - | - | - | - | - | - |
| 364 Paper Boxes, Dishes, etc* | - | - | - | - | - | - | - | - | - | - |
| 369 Primary Paper, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 37 Horticultural | .09% | .06% | .08% | 427 | 24 | 45 | $ 5.01 | $ .79 | $.00453 | $101.24 |
| (370 Trees, Shrubs, Vines ) | | | | | | | | | | |
| (371 Roots and Bulbs ) | | | | | | | | | | |
| (372 Plant Stock ) | .09 | .06 | .08 | 427 | 24 | 45 | 5.01 | .79 | .00453 | 101.24 |
| 373 Insecticides* | - | - | - | - | - | - | - | - | - | - |
| 374 Christmas Trees, Holly, etc. | - | - | - | - | - | - | - | - | - | - |
| 375 Fresh Flowers and Plants | - | - | - | - | - | - | - | - | - | - |
| 379 Horticultural, NOSH | - | - | - | - | - | - | - | - | - | - |
| 38 Scrap | .55% | 1.01% | .39% | 153 | 41 | 62 | $ 1.96 | $ .57 | $.00451 | $ 5.80 |
| 380 Furnace Slag | .08 | .33 | .06 | 85 | 55 | 76 | .89 | .46 | .00213 | 1.23 |
| 381 Iron and Teel | .30 | .56 | .19 | 141 | 42 | 63 | 1.96 | .56 | .00533 | 8.49 |
| 382 Nonferrous Scrap* | - | - | - | - | - | - | - | - | - | - |
| 383 Excelsior, Sawdust, Shavings | - | - | - | - | - | - | - | - | - | - |
| 384 Rags* | - | - | - | - | - | - | - | - | - | - |
| 385 Vegetable | .09 | .06 | .08 | 427 | 24 | 45 | 5.01 | .79 | .00453 | 5.81 |
| 386 Forest Products, NOSH | .04 | .04 | .04 | 322 | 20 | 41 | 3.81 | .87 | .00319 | 5.81 |
| 389 Scrap, NOSH | .04 | .02 | .02 | 457 | 21 | 41 | 7.64 | .85 | .00657 | 5.81 |
| 39 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |

* Included in Statistical Group No.59 - Analysis 45.21
\# See footnote on Analysis 45.17



SECTION 45. PRESENT CLASSIFICATIONS

Analysis 45.20 Traffic Statistics and Unit Revenues (Total, Terminal and Line) of Necessaries - 1932

| RATING GROUP / STATISTICAL GROUP | PERCENTAGES OF ALL TRAFFIC REVENUE | TONS | EQUATED TON MILES | AVERAGES HAUL MILES | LOAD NET TONS | LOAD EQUATED TONS | REVENUES TOTAL PER TON | TERMINAL PER EQUATED TON | LINE PER EQUATED TON-MILE | VALUE PER TON # |
|---|---|---|---|---|---|---|---|---|---|---|
| IV NECESSARIES | 12.80% | 5.56% | 13.48% | 682 | 20 | 42 | $ 8.38 | $ .83 | $.00431 | $103.61 |
| IV NECESSARIES, EXCLUDING GROUP 44 | 10.99% | 3.93% | 10.73% | 728 | 18 | 42 | $10.17 | $ .85 | $.00480 | $ - |
| 40 Dry Vegetables | 2.59% | .99% | 2.61% | 771 | 18 | 39 | $ 9.46 | $ .91 | $.00454 | $ 37.53 |
| 400 Dried Fruits | .21 | .08 | .19 | 834 | 27 | 47 | 9.33 | .74 | .00546 | 103.80 |
| 401 Potatoes (other than sweet) | 1.42 | .56 | 1.42 | 741 | 18 | 38 | 9.17 | .92 | .00454 | 23.40 |
| 402 Cabbage | .22 | .06 | .24 | 970 | 13 | 33 | 13.38 | 1.06 | .00424 | 17.48 |
| 403 Onions | .20 | .06 | .25 | 1013 | 13 | 34 | 11.84 | 1.04 | .00352 | 21.40 |
| 404 Beans and Peas, Dried | .25 | .09 | .24 | 888 | 25 | 45 | 9.57 | .78 | .00504 | 54.20 |
| 405 Peanuts | .11 | .04 | .10 | 715 | 16 | 36 | 10.74 | .98 | .00511 | 40.00 |
| 406 Nuts, NOSH | .05 | .06 | .08 | 427 | 24 | 45 | 5.01 | .79 | .00453 | 101.24 |
| 409 Dry Vegetables, NOSH | .09 | .04 | .09 | 689 | 13 | 34 | 3.91 | 1.04 | .00420 | 21.40 |
| 41 Edible Liquids | .73% | .43% | .72% | 594 | 29 | 52 | $ 6.15 | $ .67 | $.00469 | $ 82.77 |
| 410 Syrup and Molasses (Edible) | .14 | .08 | .15 | 716 | 30 | 50 | 6.67 | .70 | .00456 | 123.49 |
| 411 Molasses, Blackstrap, NOSH | .07 | .07 | .06 | 347 | 47 | 71 | 3.45 | .50 | .00519 | 15.30 |
| 412 Cottonseed Oil | .26 | .14 | .21 | 521 | 30 | 53 | 6.50 | .67 | .00566 | 90.00 |
| 413 Vegetable Oil, NOSH | .10 | .05 | .15 | 1076 | 29 | 50 | 7.21 | .71 | .00328 | 89.93 |
| 414 Fish Oil | .03 | .01 | .04 | 966 | 28 | 49 | 7.65 | .73 | .00382 | 48.52 |
| 415 Beverages | .10 | .06 | .09 | 433 | 21 | 48 | 6.21 | .73 | .00450 | 90.66 |
| 419 Edible Liquids, NOSH | .03 | .02 | .02 | 457 | 21 | 41 | 7.64 | .85 | .00657 | 80.92 |
| 42 Edible Animal Products | 4.27% | .97% | 4.43% | 936 | 13 | 41 | $16.09 | $ .86 | $.00464 | $210.34 |
| 420 Fresh Meats and Fish | 1.77 | .43 | 2.00 | 918 | 12 | 40 | 15.09 | .88 | .00416 | 168.96 |
| 421 Dressed Poultry | .32 | .05 | .30 | 1232 | 12 | 39 | 25.80 | .90 | .00558 | 258.00 |
| 422 Eggs | .50 | .07 | .53 | 1353 | 12 | 39 | 24.92 | .90 | .00477 | 207.74 |
| 423 Butter, Margarine, Butterine | .56 | .10 | .46 | 924 | 13 | 40 | 20.11 | .88 | .00585 | 393.60 |
| 424 Cheese | .13 | .03 | .11 | 819 | 14 | 42 | 16.53 | .84 | .00589 | 242.00 |
| 425 Cured Animal Products | .37 | .09 | .42 | 1011 | 15 | 43 | 14.49 | .82 | .00432 | 138.67 |
| 429 Edible Animal Products, NOSH | .82 | .20 | .61 | 739 | 17 | 44 | 11.40 | .80 | .00474 | 197.19 |
| 43 Manufactured Foods | 2.40% | 1.17% | 2.02% | 608 | 27 | 47 | $ 7.44 | $ .75 | $.00564 | $ 98.60 |
| 430 Canned Vegetables | 1.20 | .52 | 1.05 | 678 | 23 | 44 | 8.47 | .81 | .00541 | 145.11 |
| 431 Sugar | 1.11 | .59 | .89 | 567 | 31 | 51 | 6.80 | .69 | .00601 | 57.33 |
| 432 Coffee and Tea | - | - | - | - | - | - | - | - | - | - |
| 433 Bakery Goods, Confectionery* | - | - | - | - | - | - | - | - | - | - |
| 434 Candy, Chewing Gum* | - | - | - | - | - | - | - | - | - | - |
| 439 Manufactured Foods, NOSH | .09 | .06 | .08 | 427 | 24 | 45 | 5.01 | .79 | .00453 | 101.24 |
| 44 Processed Cereals | 1.81% | 1.63% | 2.75% | 571 | 24 | 46 | $ 4.05 | $ .80 | $.00240 | $ 60.36 |
| 440 Wheat Flour | 1.51 | 1.41 | 2.34 | 569 | 24 | 45 | 3.91 | .79 | .00235 | 53.84 |
| 441 Corn Meal | .03 | .03 | .05 | 456 | 20 | 41 | 2.79 | .87 | .00114 | 24.15 |
| 442 Packaged Cereals | .19 | .12 | .24 | 627 | 19 | 39 | 5.97 | .90 | .00310 | 142.26 |
| 449 Processed Cereals, NOSH | .08 | .07 | .12 | 567 | 22 | 42 | 4.18 | .83 | .00236 | 66.70 |
| 45 Furnishings | .66% | .25% | .66% | 613 | 14 | 36 | $ 9.85 | $ .97 | $.00432 | $127.31 |
| (450 Mattresses and Bed Springs | | | | | | | | | | |
| (451 Domestic Furniture & Fixtures | | | | | | | | | | |
| (452 Commercial Furniture & Fixtures | .30 | .06 | .31 | 775 | 8 | 34 | 18.14 | 1.05 | .00437 | 238.19 |
| 453 Chinaware, Glassware, Pottery | .36 | .19 | .35 | 560 | 18 | 38 | 7.13 | .92 | .00427 | 92.30 |
| 459 Furnishings, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 46 Textiles and Leather | .34% | .12% | .29% | 601 | 14 | 34 | $10.40 | $1.03 | $.00515 | $447.84 |
| 460 Cotton and Linen Fabrics | .17 | .05 | .16 | 650 | 10 | 31 | 12.87 | 1.16 | .00471 | 540.00 |
| 461 Wool Fabrics* | - | - | - | - | - | - | - | - | - | - |
| 462 Silk and Rayon Fabrics | - | - | - | - | - | - | - | - | - | - |
| (463 Canvas | - | - | - | - | - | - | - | - | - | - |
| (464 Yarns | - | - | - | - | - | - | - | - | - | - |
| 465 Burlap, Bagging and Bags | .08 | .03 | .07 | 592 | 18 | 38 | 8.56 | .92 | .00517 | 114.00 |
| 466 Textiles, NOSH* | .03 | .02 | .02 | 457 | 21 | 41 | 7.64 | .85 | .00657 | 540.00 |
| 467 Leather | .06 | .02 | .04 | 617 | 18 | 38 | 9.85 | .93 | .00585 | 626.03 |
| 469 Leather Articles, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 47 Clothing | - | - | - | - | - | - | - | - | - | - |
| 470 Men's, Women's and Children's Clothing* | - | - | - | - | - | - | - | - | - | - |
| 471 Boots and Shoes* | - | - | - | - | - | - | - | - | - | - |
| 472 Men's Furnishings* | - | - | - | - | - | - | - | - | - | - |
| 473 Women's Accessories* | - | - | - | - | - | - | - | - | - | - |
| 479 Clothing, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 49 Miscellaneous | - | - | - | - | - | - | - | - | - | - |

* Included in Statistical Group No.59 - Analysis 45.21
\# See footnote on Analysis 45.17

SECTION 45. PRESENT CLASSIFICATIONS

Analysis 45.21 Traffic Statistics and Unit Revenues (Total, Terminal and Line) of Auxiliaries - 1932

| RATING GROUP / STATISTICAL GROUP | PERCENTAGES OF ALL TRAFFIC: REVENUE | TONS | EQUATED TON MILES | AVERAGES HAUL: MILES | LOAD: NET TONS | EQUATED TONS | REVENUES TOTAL TERMINAL PER TON | LINE PER EQUATED TON | LINE PER EQUATED TON MILE | VALUE PER TON # |
|---|---|---|---|---|---|---|---|---|---|---|
| V AUXILIARIES | 21.12% | 14.71% | 16.32% | 373 | 26 | 47 | $ 5.23 | $ .74 | $.00553 | $ 97.55 |
| 50 Masonry | 3.07% | 3.33% | 2.46% | 275 | 32 | 52 | $ 3.35 | $ .67 | $.00482 | $ 13.26 |
| 500 Finished and Artificial Stone | .14 | .10 | .12 | 484 | 32 | 49 | 4.85 | .71 | .00512 | 48.21 |
| 501 Brick, Wall and Floor Tile | .42 | .55 | .39 | 279 | 37 | 57 | 2.70 | .62 | .00399 | 9.58 |
| 502 Composition Roofing | .27 | .18 | .23 | 421 | 22 | 43 | 5.55 | .83 | .00486 | 43.70 |
| 503 Cement | 1.39 | 1.84 | .86 | 196 | 39 | 59 | 2.76 | .59 | .00617 | 5.75 |
| 504 Plastering and Insulating Material | .29 | .28 | .32 | 395 | 24 | 44 | 3.79 | .79 | .00316 | 8.04 |
| 505 Wallboard | .37 | .25 | .37 | 459 | 21 | 42 | 5.35 | .85 | .00407 | 40.10 |
| 506 Building Glass | .07 | .03 | .05 | 621 | 29 | 49 | 8.21 | .72 | .00694 | 70.56 |
| 507 Tile: Pipe, Roofing & Products | .12 | .10 | .12 | 341 | 17 | 38 | 4.35 | .93 | .00308 | 12.31 |
| 509 Masonry, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 51 Power | .44% | 5.82% | 5.93% | 351 | 28 | 52 | $ 5.27 | $ .68 | $.00627 | $ 26.84 |
| 510 Gasoline, in tanks | - | - | - | - | - | - | - | - | - | - |
| 511 Kerosene, in tanks | - | - | - | - | - | - | - | - | - | - |
| 512 Gasoline, in packages | - | - | - | - | - | - | - | - | - | - |
| 513 Kerosene, in packages | - | - | - | - | - | - | - | - | - | - |
| 514 Gas* | - | - | - | - | - | - | - | - | - | - |
| 519 Power, NOSH | 88.44 | 5.82 | 5.93 | 351 | 28 | 52 | 5.27 | .68 | .00627 | 26.84 |
| 52 Lubricants | .68% | .40% | .60% | 487 | 22 | 43 | $ 6.19 | $ .83 | $.00489 | $ 76.57 |
| 520 Lubricants, in tanks | - | - | - | - | - | - | - | - | - | - |
| 521 Packaged Liquid Lubricants | - | - | - | - | - | - | - | - | - | - |
| 522 Packaged Greases | - | - | - | - | - | - | - | - | - | - |
| 529 Lubricants, NOSH | .68 | .40 | .60 | 487 | 22 | 43 | 6.19 | .83 | .00489 | 76.57 |
| 53 Kindlers* | - | - | - | - | - | - | - | - | - | - |
| 530 Matches* | - | - | - | - | - | - | - | - | - | - |
| 531 Candles* | - | - | - | - | - | - | - | - | - | - |
| 539 Kindlers, NOSH | - | - | - | - | - | - | - | - | - | - |
| 54 Preservatives | .65% | .55% | .54% | 357 | 31 | 53 | $ 4.41 | $ .67 | $.00525 | $ 34.68 |
| 540 Asphalt | .42 | .42 | .32 | 295 | 35 | 57 | 3.70 | .62 | .00559 | 10.50 |
| 541 Rosin | .06 | .04 | .07 | 540 | 20 | 40 | 5.40 | .88 | .00327 | 20.51 |
| 542 Turpentine | .02 | .01 | .02 | 1037 | 24 | 47 | 12.30 | .75 | .00521 | 108.94 |
| 543 Linseed Oil | .03 | .02 | .03 | 512 | 26 | 50 | 6.53 | .71 | .00536 | 175.39 |
| 544 Paints and Varnish | .08 | .03 | .06 | 639 | 23 | 43 | 8.71 | .82 | .00586 | 229.00 |
| 545 Tar, Wax | .04 | .03 | .04 | 418 | 25 | 45 | 5.23 | .78 | .00497 | 79.21 |
| 55 Chemicals, in tanks | .20% | .23% | .14% | 220 | 41 | 64 | $ 3.26 | $ .55 | $.00633 | $ 31.88 |
| 550 Alcohol | .07 | .04 | .06 | 526 | 22 | 45 | 7.03 | .78 | .00491 | 109.66 |
| 551 Sulphuric Acid | .13 | .19 | .08 | 162 | 49 | 72 | 2.54 | .49 | .00757 | 15.50 |
| 552 Acids, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 559 Chemicals, in tanks, NOSH | - | - | - | - | - | - | - | - | - | - |
| 56 Chemicals, Packaged | .03% | .02% | .02% | 457 | 21 | 41 | $ 7.64 | $ .85 | $.00657 | $154.26 |
| 560 Alcohol | - | - | - | - | - | - | - | - | - | - |
| 561 Sulphuric Acid | - | - | - | - | - | - | - | - | - | - |
| 562 Acids, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 569 Chemicals, packaged, NOSH* | .03 | .02 | .02 | 457 | 21 | 41 | 7.64 | .85 | .00657 | 154.26 |
| 57 Cleansers & Adhesives | .21% | .16% | .23% | 491 | 21 | 42 | $ 7.36 | $ .85 | $.00587 | $130.99 |
| 570 Soap | .28 | .14 | .21 | 495 | 21 | 42 | 7.33 | .85 | .00579 | 130.99 |
| 571 Cleaning Compounds | - | - | - | - | - | - | - | - | - | - |
| 572 Cleansers, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 573 Starch* | - | - | - | - | - | - | - | - | - | - |
| 574 Stearine* | - | - | - | - | - | - | - | - | - | - |
| 575 Glue* | - | - | - | - | - | - | - | - | - | - |
| 576 Liquid Cement* | - | - | - | - | - | - | - | - | - | - |
| 579 Adhesives, NOSH* | .03 | .02 | .02 | 457 | 21 | 42 | 7.64 | .85 | .00657 | 130.99 |
| 58 Explosives | .11% | .02% | .04% | 483 | 16 | 37 | $18.30 | $ .96 | $.01479 | $382.37 |
| 580 Ammunition | - | - | - | - | - | - | - | - | - | - |
| 589 Explosives, NOSH | .11 | .02 | .04 | 483 | 16 | 37 | 18.30 | .96 | .01479 | 382.37 |
| 59 Miscellaneous ϕ | 7.63% | 4.18% | 6.36% | 474 | 20 | 41 | $ 6.64 | $ .87 | $.00510 | $274.13 |
| 590 Miscellaneous | 7.63 | 4.18 | 6.36 | 474 | 20 | 41 | 6.64 | .87 | .00510 | 274.13 |

* Included in Statistical Group No.59
ϕ Includes all "Manufactures and Miscellaneous, NOSH", I.C.C. Commodity Group No.701
# See footnote on Analysis 45.17



SECTION 45. PRESENT CLASSIFICATIONS

Analysis 45.22 Traffic Statistics and Unit Revenues (Total, Terminal and Line) of Accessories - 1932

| RATING GROUP / STATISTICAL GROUP | PERCENTAGES OF ALL TRAFFIC: REVENUE | TONS | EQUATED TON MILES | AVERAGES HAUL: MILES | LOAD: NET TONS | EQUATED TONS | REVENUES TOTAL TERMINAL PER TON | LINE PER EQUATED TON | LINE PER EQUATED TON-MILE | VALUE PER TON # |
|---|---|---|---|---|---|---|---|---|---|---|
| VI ACCESSORIES | 5.68% | 2.81% | 4.17% | 438 | 23 | 45 | $ 7.35 | $ .79 | $.00623 | $ 149.21 |
| 60 Ferrous Metal | 2.70% | 1.97% | 1.84% | 348 | 31 | 52 | $ 5.01 | $ .68 | $.00654 | $ 46.62 |
| 600 Bars, Sheets, Plates | - | - | - | - | - | - | - | - | - | - |
| 601 Structural | 1.86 | 1.52 | 1.22 | 307 | 32 | 53 | 4.49 | .67 | .00661 | 41.37 |
| 602 Forgings and Special Processes | - | - | - | - | - | - | - | - | - | - |
| 603 Pipe and Fittings | .60 | .29 | .44 | 540 | 27 | 48 | 7.61 | .73 | .00659 | 69.62 |
| 604 Rails, Fastenings, Frogs, Switches | .06 | .06 | .05 | 336 | 40 | 61 | 3.76 | .58 | .00558 | 67.70 |
| 605 Wire, not woven | .18 | .10 | .13 | 422 | 24 | 45 | 6.19 | .79 | .00609 | 47.08 |
| 606 Nails | - | - | - | - | - | - | - | - | - | - |
| 607 Articles* | - | - | - | - | - | - | - | - | - | - |
| 609 Ferrous Metals, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 61 Nonferrous Metals | .03% | .02% | .02% | 373 | 30 | 50 | $ 5.39 | $ .70 | $.00666 | $ 244.55 |
| 610 Copper - Bars, Sheets | .03 | .02 | .02 | 373 | 30 | 50 | 5.39 | .70 | .00666 | 244.55 |
| 611 Brass and Bronze - Bars, Sheets | - | - | - | - | - | - | - | - | - | - |
| 612 Lead and Zinc - Sheets, Plates | - | - | - | - | - | - | - | - | - | - |
| 613 Aluminum - Bars, Sheets, Plates* | - | - | - | - | - | - | - | - | - | - |
| 614 Nonferrous Metals, Bars, Sheets, Plates, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 615 Pipe* | - | - | - | - | - | - | - | - | - | - |
| 616 Wire* | - | - | - | - | - | - | - | - | - | - |
| 617 Articles* | - | - | - | - | - | - | - | - | - | - |
| 619 Nonferrous Metals, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 62 Rubber | .16% | .03% | .13% | 912 | 13 | 34 | $16.57 | $1.04 | $.00604 | $ 690.00 |
| 620 Tires and Tubes | .16 | .03 | .13 | 912 | 13 | 34 | 16.57 | 1.04 | .00604 | 690.00 |
| 621 Hose* | - | - | - | - | - | - | - | - | - | - |
| 622 Articles, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 629 Rubber, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 63 Tools and Appliances* | - | - | - | - | - | - | - | - | - | - |
| 630 Cutlery | - | - | - | - | - | - | - | - | - | - |
| 631 Abrasives* | - | - | - | - | - | - | - | - | - | - |
| 632 Hardware* | - | - | - | - | - | - | - | - | - | - |
| 633 Tools, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 634 Domestic Washers, Ironers, Sweepers | - | - | - | - | - | - | - | - | - | - |
| 635 Electric Appliances, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 639 Appliances, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 64 Machinery and Parts | .56% | .20% | .41% | 588 | 18 | 39 | $10.16 | $ .91 | $.00635 | $ 622.46 |
| 640 Agricultural | .08 | .03 | .07 | 590 | 15 | 36 | 10.52 | .98 | .00573 | 246.50 |
| 641 Plumbing, Heating, Ventilating | - | - | - | - | - | - | - | - | - | - |
| 642 Engine and Boiler | - | - | - | - | - | - | - | - | - | - |
| 643 Elevators, Conveyors, etc. | - | - | - | - | - | - | - | - | - | - |
| 649 Machinery and Parts, NOSH | .48 | .17 | .34 | 587 | 18 | 39 | 10.10 | .90 | .00647 | 688.80 |
| 65 Vehicles and Parts | 1.75% | .37% | 1.37% | 698 | 11 | 35 | $17.04 | $1.02 | $.00601 | $ 343.19 |
| 650 Horsedrawn | .01 | .00 | .01 | 702 | 13 | 33 | 12.43 | 1.06 | .00529 | 160.34 |
| 651 Saddlery and Harness* | - | - | - | - | - | - | - | - | - | - |
| 652 Tractors and Autotrucks(Set Up) | .12 | .03 | .10 | 753 | 11 | 34 | 16.34 | 1.02 | .00585 | 408.32 |
| 653 Automobiles, Trailers, etc.(Set Up) | .96 | .11 | .78 | 823 | 6 | 31 | 30.77 | 1.12 | .00572 | 350.00 |
| 654 Automobiles and Autotrucks (Knocked Down) | .63 | .21 | .47 | 665 | 19 | 39 | 11.00 | .90 | .00651 | 355.60 |
| 655 Railroad | .03 | .02 | .02 | 281 | 28 | 50 | 4.60 | .71 | .00676 | 77.66 |
| 659 Vehicles and Parts, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 66 Stationery, Printing | .33% | .20% | .30% | 519 | 23 | 44 | $ 6.12 | $ .81 | $.00467 | $ 76.40 |
| 660 Books and Printing Paper | .33 | .20 | .30 | 519 | 23 | 44 | 6.12 | .81 | .00467 | 76.40 |
| 669 Stationery and Printing, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 67 Personal | .15% | .02% | .10% | 1259 | 18 | 39 | $23.02 | $ .91 | $.00785 | $1755.27 |
| 670 Drugs and Medicine* | - | - | - | - | - | - | - | - | - | - |
| 671 Toilet Articles and Accessories* | - | - | - | - | - | - | - | - | - | - |
| 672 Tobacco Manufactured Products | .10 | .02 | .10 | 1259 | 18 | 39 | 23.02 | .91 | .00785 | 1755.27 |
| 679 Personal, NOSH* | - | - | - | - | - | - | - | - | - | - |
| 68 Amusement* | - | - | - | - | - | - | - | - | - | - |
| 69 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |

* Included in Statistical Group No.59 - Analysis 45.21
# See footnote on Analysis 45.17

SECTION 45. PRESENT CLASSIFICATION

Analysis 45.23 Unit Revenues (Terminal and Line) of Commodity Groups by Districts - 1932

| RATING GROUP / COMMODITY GROUP | AVERAGE TERMINAL REVENUE PER EQUATED TON: UNITED STATES | EAST-ERN | POCA-HON-TAS | SOUTH-ERN | WEST-ERN | AVERAGE LINE REVENUE PER EQUATED TON-MILE: UNITED STATES | EASTERN | POCA-HONTAS | SOUTH-ERN | WESTERN |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | $ .63 | $.61 | $ .43 | $ .74 | $ .91 | $.00415 | $.00448 | $.00341 | $.00410 | $.00393 |
| I ROUGH MATERIAL | $ .52 | $.57 | $ .48 | $ .61 | $ .70 | $.00194 | $.00329 | $.00319 | $.00187 | $.00009 |
| 10 Sand, Stone, Gravel | .46 | .52 | .39 | .51 | .57 | .00218 | .00313 | .00315 | .00200 | .00041 |
| 11 Timber | .70 | .68 | .61 | .77 | .87 | .00202 | .00379 | .00324 | .00164 | .00055 |
| 12 Rough Vegetables | .44 | .54 | - | 1.17 | .69 | - | - | - | .00337 | - |
| 19 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |
| II RAW MATERIAL | $ .56 | $.52 | $ .39 | $ .67 | $ .90 | $.00366 | $.00398 | $.00324 | $.00350 | $.00350 |
| II RAW MATERIAL, Including Group 44 | .57 | .53 | .39 | .68 | .90 | .00361 | .00394 | .00324 | .00348 | .00339 |
| 20 Grain | .58 | .50 | .52 | .66 | .68 | .00509 | .00456 | .00423 | .00538 | .00499 |
| 21 Animal Feeds | .81 | .82 | .70 | .90 | .95 | .00220 | .00309 | .00249 | .00245 | .00137 |
| 22 Fresh Vegetables | .85 | .76 | .71 | .89 | 1.01 | .00383 | .00321 | .00513 | .00479 | .00380 |
| 23 Live Animals | 1.15 | 1.01 | 1.00 | 1.20 | 1.39 | .00332 | .00364 | .00367 | .00408 | .00269 |
| 24 Dry Fuels | .49 | .43 | .38 | .51 | .70 | .00353 | .00410 | .00319 | .00296 | .00304 |
| 25 Crude Liquids | .61 | .57 | .55 | .66 | .74 | .00447 | .00703 | .00617 | .00529 | .00369 |
| 26 Ores | .40 | .46 | .45 | .61 | .61 | .00331 | .00383 | .00370 | .00313 | .00221 |
| 27 Lumber | .77 | .72 | .66 | .80 | .92 | .00349 | .00370 | .00418 | .00332 | .00327 |
| 28 Fertilizer | .68 | .66 | .74 | .70 | .76 | .00341 | .00446 | .00347 | .00294 | .00324 |
| 29 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |
| III SEMIPROCESSED MATERIAL | $ .78 | $.69 | $ .77 | $ .91 | $ .99 | $.00432 | $.00481 | $.00418 | $.00380 | $.00397 |
| 30 Primary Metals | .50 | .49 | .45 | .50 | .61 | .00416 | .00536 | .00403 | .00365 | .00346 |
| 31 Fibres | 1.04 | .89 | .89 | 1.04 | 1.22 | .00402 | .00402 | .00384 | .00376 | .00404 |
| 32 Hides | .82 | .74 | .71 | .85 | .97 | .00620 | .00619 | .00597 | .00668 | .00600 |
| 33 Rubber | .65 | .55 | .51 | .71 | .80 | .00718 | .00751 | .00535 | .00819 | .00714 |
| 34 Salt | .71 | .64 | .64 | .78 | .86 | .00415 | .00380 | .00410 | .00374 | .00432 |
| 35 Ice | .57 | .55 | .48 | .72 | .79 | - | .00098 | - | - | - |
| 36 Primary Paper | .78 | .70 | .68 | .84 | .91 | .00463 | .00511 | .00466 | .00484 | .00400 |
| 37 Horticultural | .79 | .74 | .69 | .88 | 1.00 | .00453 | .00450 | .00342 | .00416 | .00398 |
| 38 Scrap | .57 | .58 | .56 | .64 | .90 | .00451 | .00521 | .00528 | .00275 | .00381 |
| 39 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |
| IV NECESSARIES | $ .83 | $.76 | $ .76 | $ .92 | $ .97 | $.00431 | $.00447 | $.00426 | $.00476 | $.00402 |
| IV NECESSARIES, Excluding Group 44 | .85 | .77 | .77 | .92 | .98 | .00480 | .00482 | .00451 | .00519 | .00471 |
| 40 Dry Vegetables | .91 | .82 | .81 | .99 | 1.07 | .00454 | .00513 | .00436 | .00524 | .00408 |
| 41 Edible Liquids | .67 | .63 | .62 | .71 | .80 | .00469 | .00464 | .00426 | .00495 | .00426 |
| 42 Edible Animal Products | .86 | .78 | .71 | .88 | 1.02 | .00464 | .00461 | .00479 | .00521 | .00455 |
| 43 Manufactured Foods | .75 | .71 | .68 | .83 | .82 | .00564 | .00553 | .00411 | .00518 | .00588 |
| 44 Processed Cereals | .80 | .69 | .71 | .93 | .93 | .00240 | .00301 | .00303 | .00305 | .00156 |
| 45 Furnishings | .97 | .83 | .89 | 1.14 | 1.20 | .00432 | .00415 | .00480 | .00517 | .00489 |
| 46 Textiles and Leather | 1.03 | .89 | .88 | 1.16 | 1.08 | .00515 | .00541 | .00454 | .00487 | .00575 |
| 47 Clothing* | - | - | - | - | - | - | - | - | - | - |
| 49 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |
| V AUXILIARIES | $ .74 | $.71 | $ .66 | $ .78 | $ .88 | $.00553 | $.00566 | $.00529 | $.00614 | $.00517 |
| 50 Masonry | .67 | .64 | .62 | .75 | .80 | .00482 | .00507 | .00456 | .00405 | .00478 |
| 51 Power | .68 | .61 | .59 | .71 | .83 | .00627 | .00749 | .00795 | .00822 | .00519 |
| 52 Lubricants | .83 | .74 | .75 | .90 | .99 | .00489 | .00546 | .00519 | .00506 | .00424 |
| 53 Kindlers* | - | - | - | - | - | - | - | - | - | - |
| 54 Preservatives | .67 | .62 | .57 | .74 | .79 | .00525 | .00578 | .00539 | .00456 | .00508 |
| 55 Chemicals, in tanks | .55 | .63 | .50 | .54 | .75 | .00633 | .00753 | .00688 | .00519 | .00540 |
| 56 Chemicals, packaged | .85 | .80 | .77 | .97 | 1.00 | .00657 | .00672 | .00512 | .00588 | .00606 |
| 57 Cleansers and Adhesives | .85 | .77 | .74 | .89 | 1.00 | .00587 | .00570 | .00444 | .00544 | .00627 |
| 58 Explosives | .96 | .88 | .88 | .99 | 1.14 | .01479 | .01284 | .01221 | .01573 | .01680 |
| 59 Miscellaneous# | .87 | .77 | .71 | .89 | 1.02 | .00510 | .00514 | .00478 | .00557 | .00531 |
| VI ACCESSORIES | $ .79 | $.77 | $ .74 | $ .91 | $1.03 | $.00623 | $.00585 | $.00601 | $.00667 | $.00688 |
| 60 Ferrous Metals | .68 | .66 | .63 | .79 | .78 | .00654 | .00640 | .00600 | .00556 | .00682 |
| 61 Non-ferrous Metals | .70 | .77 | 1.00 | .85 | .62 | .00666 | .00673 | .00363 | .00922 | .00597 |
| 62 Rubber | 1.04 | .90 | .91 | 1.13 | 1.17 | .00604 | .00575 | .00565 | .00777 | .00714 |
| 63 Tools and Appliances | - | - | - | - | - | - | - | - | - | - |
| 64 Machinery and Parts | .91 | .84 | .81 | .96 | 1.09 | .00635 | .00495 | .00503 | .00727 | .00801 |
| 65 Vehicles and Parts | 1.02 | .93 | .93 | 1.04 | 1.25 | .00601 | .00542 | .00552 | .00741 | .00686 |
| 66 Stationery, printing | .81 | .70 | .65 | .85 | .93 | .00467 | .00488 | .00481 | .00570 | .00475 |
| 67 Personal | .91 | .81 | .78 | .94 | 1.04 | .00785 | .00904 | .00959 | .00923 | .00650 |
| 68 Amusement* | - | - | - | - | - | - | - | - | - | - |
| 69 Miscellaneous* | - | - | - | - | - | - | - | - | - | - |

* Included in No. 59.
\# Includes all manufactures and miscellaneous I.C.C. Commodity Group No. 701.
Source: Analyses 45.17 to 45.22 inclusive.



SECTION 45. PRESENT CLASSIFICATION

Analysis 45.24 Traffic Statistics and Unit Revenue (Net Ton Mile) of Commodity Groups by Districts - 1932

| COMMODITY GROUP | PERCENTAGES OF REVENUE: EAST-ERN | POCA-HONTAS | SOUTH-ERN | WEST-ERN | PERCENTAGES OF NET TON MILES: EAST-ERN | POCA-HONTAS | SOUTH-ERN | WEST-ERN | REVENUE PER NET TON MILE: EAST-ERN | POCA-HONTAS | SOUTH-ERN | WEST-ERN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | $.0106 | $.0061 | $.0106 | $.0113 |
| I ROUGH MATERIAL | 1.90% | 1.21% | 4.14% | 3.55% | 1.74% | .74% | 4.30% | 3.77% | $.0116 | $.0099 | $.0102 | $.0106 |
| 10 Sand, Stone, Gravel | 1.39 | .77 | 2.81 | 2.07 | 1.25 | .46 | 2.86 | 2.12 | .0118 | .0103 | .0104 | .0110 |
| 11 Timber | .48 | .43 | 1.33 | 1.11 | .47 | .28 | 1.45 | 1.34 | .0109 | .0094 | .0097 | .0094 |
| 12 Rough Vegetables | .03 | - | - | .36 | .02 | - | .00 | .31 | .0192 | - | - | .0133 |
| 19 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - |
| II RAW MATERIAL | 50.69% | 83.84% | 52.50% | 49.45% | 62.67% | 91.91% | 64.21% | 54.75% | $.0086 | $.0066 | $.0086 | $.0102 |
| II RAW MATERIAL Including Group 44 | 52.57% | 84.41% | 54.57% | 51.33% | 65.32% | 92.35% | 66.32% | 56.28% | $.0086 | $.0066 | $.0087 | $.0099 |
| 20 Grain | 2.64 | .83 | 4.14 | 9.60 | 3.04 | .64 | 3.50 | 9.89 | .0093 | .0080 | .0025 | .0109 |
| 21 Animal Feeds | 1.13 | .36 | 1.73 | 1.33 | 1.49 | .32 | 1.94 | 2.05 | .0080 | .0070 | .0094 | .0073 |
| 22 Fresh Vegetables | 3.95 | 1.51 | 10.77 | 13.12 | 3.52 | .58 | 6.90 | 11.96 | .0119 | .0161 | .0165 | .0124 |
| 23 Live Animals | 2.18 | .31 | 1.13 | 5.88 | 1.68 | .11 | .52 | 3.81 | .0138 | .0177 | .0128 | .0174 |
| 24 Dry Fuels | 35.41 | 77.79 | 22.49 | 9.52 | 47.35 | 88.15 | 37.39 | 13.05 | .0079 | .0054 | .0064 | .0082 |
| 25 Crude Liquids | 1.01 | .11 | .67 | 2.52 | .55 | .05 | .50 | 3.52 | .0195 | .0148 | .0142 | .0090 |
| 26 Ores | 1.93 | .86 | 1.48 | 1.73 | 2.42 | .68 | 2.27 | 2.46 | .0085 | .0078 | .0069 | .0080 |
| 27 Lumber | 1.76 | 1.63 | 6.90 | 5.07 | 2.05 | 1.10 | 8.24 | 7.50 | .0091 | .0091 | .0088 | .0076 |
| 28 Fertilizer | .69 | .43 | 3.18 | .38 | .59 | .29 | 2.96 | .52 | .0021 | .0091 | .0114 | .0082 |
| 29 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - |
| III SEMIPROCESSED MATERIAL | 4.72% | 1.77% | 6.02% | 5.21% | 4.08% | .93% | 5.07% | 4.70% | $.0123 | $.0117 | $.0126 | $.0125 |
| 30 Primary Metals | .52 | .07 | .30 | .47 | .50 | .06 | .43 | .84 | .0110 | .0200 | .0073 | .0063 |
| 31 Fibres | .96 | .93 | 3.95 | 2.54 | .74 | .42 | 2.54 | 1.58 | .0138 | .0135 | .0160 | .0182 |
| 32 Hides | .29 | .05 | .15 | .23 | .22 | .02 | .11 | .18 | .0144 | .0137 | .0146 | .0144 |
| 33 Rubber | .27 | .00 | .01 | .01 | .21 | .00 | .01 | .01 | .0134 | .0099 | .0170 | .0139 |
| 34 Salt | .54 | .17 | .58 | .78 | .64 | .12 | .77 | .82 | .0090 | .0079 | .0106 | |
| 35 Ice | .08 | .00 | .05 | .09 | .04 | .00 | .02 | .04 | .0209 | .0288 | .0206 | .0237 |
| 36 Primary Paper | 1.13 | .24 | .51 | .71 | 1.02 | .13 | .48 | .90 | .0117 | .0111 | .0112 | .0090 |
| 37 Horticultural | .08 | .04 | .09 | .11 | .07 | .03 | .08 | .09 | .0114 | .0073 | .0117 | .0125 |
| 38 Scrap | .85 | .27 | .49 | .27 | .63 | .14 | .63 | .24 | .0143 | .0118 | .0083 | .0126 |
| 39 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - |
| IV NECESSARIES | 13.11% | 4.18% | 12.75% | 14.08% | 10.71% | 2.19% | 9.44% | 14.16% | $.0130 | $.0117 | $.0143 | $.0112 |
| IV NECESSARIES Excluding Group 44 | 11.22% | 3.61% | 10.68% | 12.20% | 8.05% | 1.75% | 7.33% | 10.62% | $.0148 | $.0127 | $.0154 | $.0129 |
| 40 Dry Vegetables | 2.18 | .83 | 2.52 | 3.39 | 1.61 | .46 | 1.81 | 3.55 | .0144 | .0112 | .0147 | .0108 |
| 41 Edible Liquids | .52 | .08 | 1.32 | .90 | .52 | .05 | 1.28 | 1.03 | .0106 | .0094 | .0110 | .0099 |
| 42 Edible Animal Products | 5.43 | 1.05 | 3.23 | 3.89 | 3.48 | .40 | 1.84 | 2.45 | .0166 | .0161 | .0186 | .0179 |
| 43 Manufactured Foods | 2.00 | .71 | 1.78 | 3.37 | 1.66 | .50 | 1.42 | 3.19 | .0128 | .0088 | .0132 | .0119 |
| 44 Processed Cereals | 1.89 | .57 | 2.07 | 1.88 | 2.66 | .44 | 2.11 | 3.53 | .0075 | .0079 | .0104 | .0060 |
| 45 Furnishings | .82 | .77 | .70 | .46 | .61 | .26 | .34 | .29 | .0142 | .0182 | .0218 | .0180 |
| 46 Textiles and Leather | .29 | .17 | 1.12 | .18 | .17 | .08 | .64 | .13 | .0176 | .0129 | .0185 | .0158 |
| 47 Clothing* | - | - | - | - | - | - | - | - | - | - | - | - |
| 49 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - |
| V AUXILIARIES | 21.92% | 6.96% | 20.81% | 22.99% | 15.80% | 3.39% | 14.68% | 19.62% | $.0147 | $.0126 | $.0150 | $.0132 |
| 50 Masonry | 3.59 | 1.39 | 3.13 | 2.76 | 3.05 | .78 | 3.19 | 2.48 | .0128 | .0109 | .0104 | .0125 |
| 51 Power | 5.49 | 1.59 | 9.74 | 12.63 | 3.08 | .50 | 5.28 | 11.02 | .0189 | .0195 | .0195 | .0129 |
| 52 Lubricants | .72 | .14 | .47 | .80 | .54 | .07 | .38 | .79 | .0142 | .0131 | .0130 | .0114 |
| 53 Kindlers* | - | - | - | - | - | - | - | - | - | - | - | - |
| 54 Preservatives | .77 | .25 | 1.01 | .50 | .59 | .14 | .98 | .50 | .0139 | .0114 | .0109 | .0112 |
| 55 Chemicals, in tanks | .24 | .15 | .35 | .14 | .13 | .06 | .38 | .10 | .0189 | .0145 | .0099 | .0147 |
| 56 Chemicals, packaged | .04 | .00 | .02 | .04 | .03 | .00 | .01 | .03 | .0182 | .0133 | .0158 | .0152 |
| 57 Cleansers and Adhesives | .37 | .07 | .29 | .30 | .26 | .04 | .23 | .22 | .0153 | .0101 | .0135 | .0154 |
| 58 Explosives | .10 | .07 | .08 | .14 | .03 | .01 | .02 | .04 | .0338 | .0511 | .0393 | .0423 |
| 59 Miscellaneous | 10.61 | 3.30 | 5.72 | 5.69 | 8.10 | 1.79 | 4.21 | 4.44 | .0139 | .0113 | .0144 | .0144 |
| VI ACCESSORIES | 7.66% | 2.05% | 3.78% | 4.72% | 5.00% | .83% | 2.29% | 3.01% | $.0163 | $.0151 | $.0174 | $.0177 |
| 60 Ferrous Metals | 4.12 | .93 | 1.43 | 1.84 | 2.93 | .44 | 1.20 | 1.50 | .0149 | .0129 | .0126 | .0138 |
| 61 Non-ferrous Metals | .04 | .00 | .00 | .03 | .03 | .00 | .00 | .03 | .0172 | .0185 | .0191 | .0113 |
| 62 Rubber | .18 | .03 | .10 | .17 | .11 | .01 | .04 | .11 | .0175 | .0163 | .0240 | .0183 |
| 63 Tools and Appliances | - | - | - | - | - | - | - | - | - | - | - | - |
| 64 Machinery and Parts | .60 | .15 | .46 | .62 | .43 | .06 | .25 | .34 | .0149 | .0140 | .0196 | .0206 |
| 65 Vehicles and Parts | 2.09 | .44 | 1.24 | 1.76 | .96 | .12 | .49 | .76 | .0231 | .0235 | .0267 | .0260 |
| 66 Stationery, printing | .55 | .20 | .14 | .16 | .50 | .12 | .11 | .15 | .0118 | .0106 | .0135 | .0116 |
| 67 Personal | .07 | .30 | .40 | .14 | .03 | .08 | .20 | .11 | .0221 | .0223 | .0214 | .0139 |
| 68 Amusement* | - | - | - | - | - | - | - | - | - | - | - | - |
| 69 Miscellaneous* | - | - | - | - | - | - | - | - | - | - | - | - |

* Included in No. 59.

## SECTION 46. SUGGESTED CLASSIFICATION

### Analysis 46.1 Result of Highway Liberal Classification Provisions

| BUSINESS GROUPS | TONS REPORTED BY SHIPPERS: ALL SHIPPERS # TOTAL TONNAGE (000) | ALL SHIPPERS # HIGHWAY TONNAGE (000) | ALL SHIPPERS # PER CENT | SHIPPERS USING HIGHWAY ON ACCOUNT LIBERAL MIXTURES ∮ TOTAL TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT LIBERAL MIXTURES ∮ HIGHWAYS TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT LIBERAL MIXTURES ∮ PER CENT |
|---|---|---|---|---|---|---|
| ALL GROUPS | 290,203 | 16,275 | 6% | 31,774 | 4,207 | 13% |
| I ROUGH MATERIAL* | 12,350 | 1,683 | 14% | 342 | 106 | 31% |
| 34 Sand, Stone, Gravel | 12,060 | 1,670 | 14 | 342 | 106 | 31 |
| 8b Timber | 290 | 14 | 5 | - | - | - |
| II RAW MATERIAL* | 67,284 | 1,950 | 3% | 852 | 133 | 16% |
| 10a Grain | 3,068 | 3 | ∮ | - | - | - |
| 16 Fresh Fruits and Vegetables | 2,436 | 482 | 20 | 52 | 8 | 15 |
| 22 Livestock and Poultry | 832 | 476 | 57 | 11 | 3 | 27 |
| 12 Coal, Coke and Fuel | 45,165 | 539 | 1 | 493 | 12 | 2 |
| 26 Ores and Concentrates | 8,463 | 48 | 1 | - | - | - |
| 8c Lumber | 6,833 | 318 | 5 | 279 | 99 | 35 |
| 03 Barrels, Cooperage Material | 487 | 93 | 19 | 14 | 13 | 76 |
| III SEMI-PROCESSED MATERIAL* | 12,748 | 1,314 | 10% | 2,377 | 239 | 10% |
| 13 Cotton, Cotton Linters | 1,259 | 185 | 15 | 20 | 18 | 89 |
| 29 Paper, Paper Products | 11,439 | 1,123 | 10 | 2,357 | 221 | 9 |
| 35 Horticultural Material | 50 | 5 | 10 | - | - | - |
| IV NECESSARIES* | 50,748 | 3,869 | 8% | 9,747 | 1,289 | 13% |
| 04 Beverages and Liquors | 1,063 | 339 | 32 | 252 | 121 | 48 |
| 36 Sugar, Syrups and Molasses | 9,679 | 648 | 7 | 6 | 2 | 25 |
| 39 Vegetable Oil, Meal and Cake | 1,360 | 213 | 16 | 8 | 5 | 64 |
| 27 Packing House Products | 7,534 | 494 | 7 | 6,837 | 424 | 6 |
| 02 Bakery Goods, Confectionery | 1,486 | 258 | 17 | 1,145 | 199 | 17 |
| 09 Canned Goods | 2,342 | 299 | 13 | 498 | 38 | 8 |
| 18 Groceries | 2,362 | 544 | 23 | 487 | 364 | 75 |
| 10b Cereals, Flour, Mill Products | 18,401 | 406 | 2 | 99 | 15 | 15 |
| 17 Furniture and Furnishings | 606 | 66 | 11 | 377 | 114 | 30 |
| 31 Porcelain, China, etc. | 152 | 6 | 4 | - | - | - |
| 21 Leather and Leather Goods | 927 | 77 | 8 | 2 | 1 | 53 |
| 37 Textiles | 4,166 | 433 | 10 | 36 | 5 | 14 |
| 07 Boots and Shoes | 506 | 50 | 10 | - | - | - |
| 15 Dry Goods, Clothing | 163 | 37 | 23 | 1 | ∮ | 26 |
| V AUXILIARIES* | 98,280 | 4,192 | 4% | 12,222 | 1,498 | 12% |
| 8a Masonry Materials (except wood) | 17,756 | 830 | 5 | 838 | 445 | 53 |
| 30 Petroleum, Crude and Refined | 37,422 | 1,219 | 3 | 7,575 | 372 | 5 |
| 28 Paints, Varnishes and Gums | 197 | 36 | 18 | 21 | 1 | 7 |
| 11 Chemicals | 6,807 | 322 | 5 | 813 | 102 | 13 |
| 40 Miscellaneous Commodities | 36,098 | 1,755 | 5 | 2,976 | 577 | 19 |
| VI ACCESSORIES* | 48,793 | 3,258 | 7% | 6,234 | 942 | 15% |
| 19 Iron and Steel, Structural | 11,363 | 226 | 2 | 39 | 10 | 26 |
| 20 Iron and Steel Articles | 19,935 | 998 | 5 | 1,112 | 110 | 10 |
| 24 Metals, Non-ferrous | 1,921 | 216 | 11 | 212 | 58 | 27 |
| 33 Rubber, Rubber Articles, Tires | 1,581 | 213 | 13 | 544 | 43 | 8 |
| 23 Machinery, Vehicles, etc. | 4,974 | 205 | 4 | 233 | 23 | 10 |
| 32 Plumbing and Heating Supplies | 589 | 21 | 4 | 19 | 6 | 33 |
| 01 Automotive Vehicles and Parts | 6,331 | 1,253 | 20 | 3,836 | 661 | 17 |
| 05 Boats, Marine Equipment | 154 | 1 | 1 | - | - | - |
| 06 Books and Periodicals | 821 | 55 | 7 | 195 | 23 | 12 |
| 14 Department Store Merchandise | 466 | 37 | 8 | 40 | 7 | 18 |
| 38 Tobacco, Tobacco Products | 710 | 32 | 5 | 5 | ∮ | 5 |
| 25 Musical Instruments and Supplies | 5 | ∮ | 3 | - | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# As reported by respondents to Shippers' Inquiry.
∮ As reported by respondents to Shippers' Inquiry.
∮ Less than 500 tons.
$ Less than ½%.



## SECTION 49. COMMODITY LEVEL

### Analysis 49.1 Shippers' Comparisons of Charges, Classified by Commodities*

| BUSINESS GROUPS | AVERAGE HAUL MILES | AVERAGE LOAD TONS HIGHWAY | AVERAGE LOAD TONS RAILWAY | TRANSPORT CHARGES# PER NET TON HIGHWAY | TRANSPORT CHARGES# PER NET TON RAILWAY | TRANSPORT CHARGES# PER NET TON MILE HIGHWAY | TRANSPORT CHARGES# PER NET TON MILE RAILWAY | TOTAL CHARGES∮ PER TON MILE HIGHWAY | TOTAL CHARGES∮ PER TON MILE RAILWAY |
|---|---|---|---|---|---|---|---|---|---|
| ALL GROUPS | 221 | 8 | 17 | $6.56 | $7.89 | $ .030 | $ .036 | $ .039 | $ .044 |
| I ROUGH MATERIAL* | 73 | 7 | 50 | $1.45 | $1.10 | $ .020 | $ .015 | $ .029 | $ .046 |
| 34 Sand, Stone, Gravel | 73 | 7 | 50 | 1.45 | 1.10 | .020 | .015 | .029 | .046 |
| 8b Timber | - | - | - | - | - | - | - | - | - |
| II RAW MATERIAL* | 206 | 7 | 20 | $5.11 | $6.49 | $ .025 | $ .032 | $ .026 | $ .036 |
| 10a Grain | 226 | 7 | 17 | 5.86 | 7.25 | .026 | .032 | .026 | .032 |
| 16 Fresh Fruits and Vegetables | 281 | 7 | 16 | 6.04 | 8.12 | .021 | .029 | .045 | .083 |
| 22 Livestock and Poultry | 500 | 5 | 8 | 5.00 | 8.10 | .010 | .016 | .010 | .019 |
| 12 Coal, Coke and Fuel | 59 | 7 | 44 | 1.42 | 1.35 | .024 | .023 | .024 | .031 |
| 26 Ores and Concentrates | 150 | 6 | 6 | 6.17 | 10.00 | .041 | .067 | .041 | .067 |
| 8c Lumber | 121 | 6 | 22 | 4.13 | 4.98 | .033 | .040 | .035 | .045 |
| 03 Barrels, Cooperage Material | 155 | 6 | 11 | 6.91 | 7.29 | .045 | .047 | .062 | .075 |
| III SEMIPROCESSED MATERIAL* | 195 | 7 | 15 | $4.90 | $6.65 | $ .025 | $ .034 | $ .028 | $ .040 |
| 13 Cotton, Cotton Linters | 217 | 5 | 17 | 2.23 | 6.45 | .010 | .030 | .020 | .043 |
| 29 Paper, Paper Products | 190 | 8 | 15 | 5.63 | 6.71 | .030 | .035 | .040 | .055 |
| 35 Horticultural Material | - | - | - | - | - | - | - | - | - |
| IV NECESSARIES* | 249 | 7 | 14 | $7.02 | $8.59 | $ .028 | $ .035 | $ .038 | $ .046 |
| 04 Beverages and Liquors | 600 | 8 | 23 | 6.37 | 9.96 | .019 | .029 | .019 | .032 |
| 36 Sugar, Syrups and Molasses | 124 | 7 | 26 | 3.74 | 3.70 | .030 | .030 | .030 | .038 |
| 39 Vegetable Oil, Meal and Cake | 117 | 5 | 20 | 2.99 | 3.49 | .025 | .030 | .042 | .037 |
| 27 Packing House Products | 342 | 9 | 11 | 8.17 | 10.81 | .024 | .032 | .049 | .063 |
| 02 Bakery Goods, Confectionery | 234 | 8 | 14 | 7.16 | 7.89 | .031 | .034 | .061 | .071 |
| 09 Canned Goods | 235 | 8 | 16 | 5.33 | 6.20 | .023 | .026 | .025 | .033 |
| 18 Groceries | 224 | 6 | 14 | 6.10 | 8.61 | .027 | .038 | .030 | .045 |
| 10b Cereals, Flour, Mill Products | 111 | 6 | 16 | 3.23 | 4.47 | .029 | .040 | .031 | .045 |
| 17 Furniture and Furnishings | 270 | 6 | 9 | 13.50 | 10.45 | .050 | .039 | .063 | .079 |
| 31 Porcelain, China, etc. | 205 | 9 | 11 | 6.69 | 8.65 | .033 | .042 | .058 | .076 |
| 21 Leather and Leather Goods | 188 | 7 | 12 | 7.45 | 8.97 | .040 | .048 | .051 | .059 |
| 37 Textiles | 316 | 7 | 8 | 11.68 | 12.72 | .037 | .040 | .061 | .070 |
| 07 Boots and Shoes | 140 | 6 | 13 | 12.78 | 13.96 | .029 | .032 | .029 | .041 |
| 15 Dry Goods, Clothing | 300 | 7 | 8 | 10.68 | 14.45 | .036 | .048 | .056 | .075 |
| V AUXILIARIES* | 190 | 8 | 20 | $5.28 | $6.10 | $ .028 | $ .032 | $ .030 | $ .036 |
| 8a Masonry Materials(except wood) | 81 | 9 | 28 | 2.48 | 2.60 | .031 | .032 | .034 | .041 |
| 30 Petroleum, Crude and Refined | 150 | 9 | 19 | 4.68 | 5.94 | .031 | .040 | .031 | .048 |
| 28 Paints, Varnishes and Gums | 343 | 7 | 15 | 4.46 | 8.07 | .013 | .024 | .016 | .031 |
| 11 Chemicals | 262 | 7 | 13 | 8.23 | 9.78 | .031 | .037 | .038 | .052 |
| 40 Miscellaneous Commodities | 264 | 8 | 15 | 7.42 | 8.30 | .028 | .031 | .039 | .048 |
| VI ACCESSORIES* | 238 | 7 | 15 | $8.24 | $9.71 | $ .035 | $ .041 | $ .040 | $ .050 |
| 19 Iron and Steel, Structural | 125 | 8 | 21 | 4.06 | 4.54 | .033 | .036 | .037 | .051 |
| 20 Iron and Steel Articles | 196 | 8 | 19 | 6.15 | 6.76 | .031 | .034 | .049 | .064 |
| 24 Metals, Nonferrous | 155 | 7 | 18 | 6.52 | 7.33 | .042 | .047 | .081 | .089 |
| 33 Rubber, Rubber Articles, Tires | 561 | 7 | 15 | 13.59 | 15.88 | .024 | .028 | .028 | .036 |
| 23 Machinery, Vehicles, etc. | 224 | 7 | 11 | 8.54 | 8.96 | .038 | .040 | .059 | .070 |
| 32 Plumbing and Heating Supplies | 203 | 8 | 17 | 7.39 | 8.95 | .036 | .044 | .060 | .076 |
| 01 Automotive, Vehicle and Parts | 274 | 7 | 11 | 9.37 | 11.66 | .034 | .043 | .036 | .047 |
| 05 Boats, Marine Equipment | - | - | - | - | - | - | - | - | - |
| 06 Books and Periodicals | 341 | 8 | 10 | 8.79 | 13.20 | .026 | .039 | .047 | .064 |
| 14 Department Store Merchandise | 360 | 8 | 20 | 9.40 | 10.10 | .026 | .028 | .092 | .098 |
| 38 Tobacco, Tobacco Products | 137 | 7 | 12 | 8.09 | 10.00 | .059 | .073 | .059 | .087 |
| 25 Musical Instruments & Supplies | - | - | - | - | - | - | - | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# Tariff - drayage and packing omitted.
∮ Includes drayage and packing, if any.

SECTION 49. COMMODITY LEVEL

Analysis 49.2 Shippers' Comparison of Transport Charges Classified by Length of Haul*

| MILEAGE RANGE | | COMMODITY GROUP | AVERAGE HAUL | AVERAGE LOAD TONS | | TRANSPORT CHARGES# PER NET TON | | TRANSPORT CHARGES# PER NET TON MILE | |
|---|---|---|---|---|---|---|---|---|---|
| OVER | UNDER | | MILES | HIGHWAY | RAILWAY | HIGHWAY | RAILWAY | HIGHWAY | RAILWAY |
| 1 | 50 | All Groups | 31 | 8 | 24 | $ 2.11 | $ 2.54 | $ .068 | $ .082 |
| | | I Rough Material | 20 | 6 | 52 | 1.07 | .93 | .054 | .046 |
| | | II Raw Material | 31 | 6 | 31 | 1.59 | 2.12 | .051 | .068 |
| | | III Semiprocessed Material | 34 | 7 | 19 | 2.38 | 2.97 | .070 | .087 |
| | | IV Necessaries | 34 | 6 | 17 | 2.37 | 3.16 | .071 | .094 |
| | | V Auxiliaries | 30 | 9 | 25 | 1.81 | 2.16 | .061 | .073 |
| | | VI Accessories | 34 | 8 | 20 | 2.95 | 3.25 | .086 | .095 |
| 51 | 100 | All Groups | 80 | 8 | 17 | $ 3.92 | $ 4.82 | $ .049 | $ .060 |
| | | I Rough Material | 80 | 9 | 35 | 3.00 | 3.50 | .038 | .044 |
| | | II Raw Material | 73 | 6 | 21 | 3.09 | 3.48 | .042 | .047 |
| | | III Semiprocessed Material | 81 | 7 | 16 | 4.11 | 4.67 | .051 | .058 |
| | | IV Necessaries | 82 | 7 | 14 | 3.75 | 5.06 | .046 | .062 |
| | | V Auxiliaries | 77 | 10 | 22 | 3.30 | 3.89 | .043 | .050 |
| | | VI Accessories | 81 | 8 | 16 | 4.63 | 5.06 | .057 | .062 |
| 101 | 200 | All Groups | 155 | 8 | 15 | $ 6.56 | $ 6.70 | $ .042 | $ .043 |
| | | I Rough Material | - | - | - | - | - | - | - |
| | | II Raw Material | 153 | 7 | 14 | 5.28 | 5.97 | .034 | .039 |
| | | III Semiprocessed Material | 149 | 7 | 15 | 4.97 | 5.62 | .033 | .038 |
| | | IV Necessaries | 159 | 8 | 13 | 5.94 | 7.05 | .037 | .044 |
| | | V Auxiliaries | 152 | 8 | 19 | 5.32 | 5.68 | .035 | .037 |
| | | VI Accessories | 157 | 7 | 13 | 8.98 | 7.65 | .057 | .049 |
| 201 | 300 | All Groups | 258 | 7 | 14 | $ 8.47 | $ 11.86 | $ .033 | $ .046 |
| | | I Rough Material | - | - | - | - | - | - | - |
| | | II Raw Material | 253 | 7 | 13 | 7.08 | 7.58 | .028 | .030 |
| | | III Semiprocessed Material | 251 | 8 | 15 | 5.90 | 7.22 | .024 | .029 |
| | | IV Necessaries | 257 | 7 | 13 | 7.92 | 9.49 | .031 | .037 |
| | | V Auxiliaries | 258 | 8 | 15 | 7.11 | 7.60 | .028 | .029 |
| | | VI Accessories | 262 | 7 | 14 | 8.49 | 9.25 | .032 | .035 |
| 301 | 500 | All Groups | 393 | 8 | 15 | $ 9.78 | $ 11.51 | $ .025 | $ .029 |
| | | I Rough Material | - | - | - | - | - | - | - |
| | | II Raw Material | 401 | 8 | 14 | 7.80 | 9.87 | .019 | .025 |
| | | III Semiprocessed Material | 384 | 7 | 14 | 9.32 | 11.11 | .024 | .029 |
| | | IV Necessaries | 395 | 8 | 14 | 8.99 | 11.21 | .023 | .028 |
| | | V Auxiliaries | 398 | 7 | 15 | 10.33 | 10.70 | .026 | .027 |
| | | VI Accessories | 389 | 8 | 18 | 10.74 | 12.85 | .028 | .033 |
| 501 and over | | All Groups | 773 | 7 | 13 | $ 17.25 | $ 18.96 | $ .022 | $ .025 |
| | | I Rough Material | - | - | - | - | - | - | - |
| | | II Raw Material | 815 | 6 | 21 | 15.33 | 21.08 | .019 | .026 |
| | | III Semiprocessed Material | 630 | 7 | 11 | 13.00 | 16.25 | .021 | .026 |
| | | IV Necessaries | 804 | 8 | 11 | 18.26 | 18.89 | .023 | .023 |
| | | V Auxiliaries | 770 | 7 | 14 | 16.85 | 17.61 | .022 | .023 |
| | | VI Accessories | 754 | 7 | 12 | 17.59 | 20.28 | .023 | .027 |

* From returns to Shippers' Inquiry.
# Tariff only - drayage, etc. omitted.



SECTION 49. COMMODITY LEVEL

Analysis 49.3 Shippers' Comparison of Transport Charges Classified by Size of Load*

| AVERAGE LOAD TONS | | AVERAGE HAUL | TRANSPORT CHARGES # PER NET TON | | TRANSPORT CHARGES # PER NET TON MILE | |
|---|---|---|---|---|---|---|
| HIGHWAY | RAILWAY | MILES | HIGHWAY | RAILWAY | HIGHWAY | RAILWAY |
| 4 | 20 | 176 | $5.06 | $5.79 | $.029 | $.033 |
| 5 | 13 | 197 | 7.38 | 8.52 | .037 | .043 |
| 6 | 17 | 214 | 7.15 | 8.25 | .033 | .038 |
| 7 | 18 | 262 | 7.15 | 8.75 | .027 | .033 |
| 8 | 17 | 265 | 7.42 | 9.00 | .028 | .034 |
| 9 | 21 | 222 | 6.58 | 6.95 | .030 | .031 |
| 10 | 18 | 277 | 7.49 | 7.57 | .027 | .027 |
| 11 | 19 | 316 | 7.48 | 9.29 | .024 | .029 |
| 12 | 25 | 162 | 4.87 | 4.90 | .030 | .030 |
| 13 | 22 | 176 | 5.06 | 5.06 | .029 | .029 |
| 14 | 27 | 95 | 2.72 | 3.33 | .029 | .035 |
| 15 | 18 | 202 | 5.13 | 5.76 | .025 | .029 |
| 17 | 31 | 185 | 4.00 | 5.30 | .022 | .029 |
| 18 | 25 | 117 | 2.65 | 2.91 | .023 | .025 |
| 19 | 28 | 87 | 1.55 | 1.97 | .018 | .023 |
| 20 | 26 | 185 | 5.11 | 4.77 | .028 | .026 |

* From returns to Shippers' Inquiry.
# Tariff - Drayage omitted.

SECTION 49. COMMODITY LEVEL

Analysis 49.4 Unit Revenues of Rail, Water and Pipe Carriers

| CARRIER AND TERRITORY | REVENUES (000) | REVENUE TON MILES# (millions) | AVERAGE HAUL# (miles) | AVERAGE REVENUE PER TON MILE# |
|---|---|---|---|---|
| RAIL - UNITED STATES | $ 2,442,881* | 235,638 | 365 | $ .0104 |
| WATER - UNITED STATES | $ 119,584 | 37,082 | 785 | $ .0032 |
| PIPE - UNITED STATES | $ 211,789 | 31,511 | 380 | $ .0067 |
| RAILWAYS | | | | |
| Eastern | $ 1,053,331* | 113,428 | 396 | $ .0093 |
| Southern | 473,963* | 47,318 | 295 | .0100 |
| Western | 915,587* | 74,892 | 376 | .0122 |
| WATERWAYS | | | | |
| Common Carriers - Carlot | $ 102,410 | 18,135 | 966 | $ .0056 |
| Atlantic Coast | 24,767 | 1,764 | 377 | .0140 |
| Atlantic Gulf | 13,099 | 2,714 | 1,187 | .0049 |
| Intercoastal | 38,946 | 10,001 | 2,553 | .0039 |
| Inland Waters | 8,571 | 1,481 | 646 | .0058 |
| Great Lakes | 7,404 | 1,144 | 382 | .0065 |
| Pacific Coast | 9,420 | 1,028 | 396 | .0092 |
| Other Carriers - Cargo | 17,174 | 18,947 | 666 | .0009 |
| Atlantic Coast | 3,278 | 2,143 | 636 | .0015 |
| Atlantic Gulf | 1,227 | 859 | 1,657 | .0014 |
| Intercoastal | 183 | 136 | 2,847 | .0013 |
| Inland Waterways | 1,010 | 349 | 527 | .0029 |
| Great Lakes | 11,099 | 15,391 | 648 | .0007 |
| Pacific Coast | 377 | 66 | 409 | .0057 |
| PIPE LINES ∮ | | | | |
| Crude Petroleum | $ 200,266 | 30,130 | 377 | $ .0066 |
| North Atlantic | 6,311 | 797 | 433 | .0080 |
| Great Lakes - Southwest | 89,671 | 19,891 | 856 | .0045 |
| Southwest - Gulf | 104,281 | 9,442 | 172 | .0110 |
| Gasoline | 11,522 | 1,381 | 489 | .0083 |
| North Atlantic | 2,995 | 261 | 267 | .0115 |
| Great Lakes - Southwest | 8,527 | 1,120 | 607 | .0076 |
| Southwest - Gulf | - | - | - | - |

# For water lines the rail distances are used in computing ton miles, for purposes of Comparisons with Railways.
* Freight Only.
∮ Two Southwest - Gulf companies did not segregate revenues and ton mileages. As the proportion of refined to crude was only 5% the entire revenue tons and ton miles were included in crude.



SECTION 49. COMMODITY LEVEL
Analysis 49.5 Motor Truck Basic Costs#

AVERAGE GROSS WEIGHT THROUGHOUT ANNUAL MILEAGE-POUNDS

| RATED CAPACITY POUNDS | NUMBER OF TRUCKS | AVERAGE GROSS WEIGHT | RATED CAPACITY POUNDS | NUMBER OF TRUCKS | AVERAGE GROSS WEIGHT | RATED CAPACITY POUNDS | NUMBER OF TRUCKS | AVERAGE GROSS WEIGHT | RATED CAPACITY POUNDS | NUMBER OF TRUCKS | AVERAGE GROSS WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 6 | 1,821 | 6,500 | 54 | 13,622 | 14,500 | 5 | 24,130 | 25,300 | 142 | 37,141 |
| 1,000 | 554 | 3,717 | 7,000 | 302 | 14,843 | 15,000 | 274 | 24,517 | 26,000 | 1 | 37,000 |
| 1,500 | 188 | 4,467 | 7,200 | 78 | 12,320 | 16,000 | 123 | 27,580 | 27,000 | 5 | 45,342 |
| 2,000 | 957 | 5,992 | 7,500 | 22 | 19,338 | 17,500 | 12 | 25,250 | 28,000 | 4 | 39,564 |
| 2,500 | 3,266 | 6,634 | 8,000 | 834 | 15,803 | 18,000 | 19 | 22,430 | 28,500 | 43 | 51,500 |
| 3,000 | 3,200 | 6,998 | 9,000 | 93 | 16,392 | 20,000 | 144 | 33,588 | 30,000 | 116 | 52,826 |
| 3,500 | 273 | 7,083 | 9,500 | 88 | 19,725 | 21,000 | 2 | 29,918 | 34,000 | 8 | 43,000 |
| 4,000 | 3,616 | 9,518 | 10,000 | 1,211 | 19,759 | 22,000 | 9 | 37,318 | 35,000 | 35 | 48,200 |
| 4,500 | 119 | 8,778 | 11,000 | 242 | 19,149 | 22,500 | 1 | 29,632 | 36,000 | 39 | 47,800 |
| 4,750 | 64 | 11,777 | 12,000 | 106 | 18,815 | 22,750 | 1 | 28,450 | 44,000 | 2 | 57,425 |
| 5,000 | 441 | 12,560 | 13,000 | 598 | 19,272 | 24,000 | 20 | 30,517 | 56,000 | 8 | 64,975 |
| 6,000 | 1,030 | 14,644 | 14,000 | 63 | 22,558 | 25,000 | 4 | 33,668 | Total 18,532 trucks | | |

AVERAGE GROSS WEIGHT GROUPING-THOUSANDS OF POUNDS

| ITEM - PER TRUCK | Under 5 | 5-10 | 10-15 | 15-20 | 20-25 | 25 & Over |
|---|---|---|---|---|---|---|
| ANNUAL MILEAGE, FOR HIRE TRUCKS | 13,504 | 20,138 | 23,240 | 22,683 | 35,410 | 36,995 |
| Number of Trucks | 33 | 143 | 383 | 303 | 200 | 326 |
| Average Gross Weight | 3,584 | 7,250 | 12,192 | 17,646 | 21,000 | 40,310 |
| ANNUAL MILEAGE, PRIVATE TRUCKS | 18,115 | 12,806 | 14,864 | 17,686 | 20,279 | 32,503 |
| Number of Trucks | 1,026 | 9,382 | 2,683 | 2,145 | 452 | 577 |
| Average Gross Weight | 3,834 | 7,230 | 11,731 | 17,181 | 22,321 | 35,027 |
| AVERAGE LOAD, IN % OF RATED CAPACITY | 50.6 | 64.3 | 71.4 | 60.0 | 77.0 | 86.0 |
| Number of Trucks | 1,057 | 9,893 | 3,236 | 2,712 | 645 | 918 |
| Average Gross Weight | 3,817 | 7,181 | 11,377 | 17,685 | 22,207 | 36,481 |
| GASOLINE CONSUMPTION, GALLONS PER MILE | .09497 | .13827 | .16922 | .22663 | .26718 | .33730 |
| Number of Trucks | 1,038 | 9,557 | 3,226 | 2,705 | 720 | 617 |
| Average Gross Weight | 3,814 | 7,256 | 11,445 | 17,690 | 23,614 | 39,670 |
| OIL CONSUMPTION, QUARTS PER MILE | .01055 | .01769 | .02101 | .01889 | .02337 | .02810 |
| Number of Trucks | 995 | 6,073 | 2,062 | 2,318 | 597 | 647 |
| Average Gross Weight | 3,814 | 7,325 | 11,702 | 17,799 | 22,223 | 34,073 |
| TIRE COST, CENTS PER MILE | 1.3236 | .6123 | .6770 | 1.2074 | 1.2065 | 1.6563 |
| Number of Trucks | 813 | 8,291 | 2,499 | 2,283 | 441 | 501 |
| Average Gross Weight | 3,767 | 7,181 | 11,119 | 17,687 | 22,216 | 35,112 |
| VEHICLE MAINTENANCE, CENTS PER MILE | 1.0221 | 1.9172 | 2.2173 | 3.1106 | 2.5264 | 2.6668 |
| Number of Trucks | 900 | 8,128 | 2,528 | 2,348 | 454 | 702 |
| Average Gross Weight | 3,855 | 7,205 | 11,143 | 17,800 | 22,212 | 38,107 |
| GARAGE MISCELLANEOUS, DOLLARS PER YEAR | 75.69 | 110.11 | 120.04 | 166.20 | 133.42 | 186.30 |
| Number of Trucks | 610 | 3,656 | 1,190 | 665 | 156 | 362 |
| Average Gross Weight | 3,892 | 6,864 | 10,936 | 17,001 | 22,633 | 40,464 |
| VEHICLE DEPRECIATION, CENTS PER MILE | 1.1319 | 2.3682 | 2.7477 | 3.1976 | 2.6449 | 3.9432 |
| Number of Trucks | 685 | 8,229 | 2,578 | 3,342 | 434 | 761 |
| Average Gross Weight | 3,935 | 7,172 | 11,136 | 17,787 | 22,250 | 37,900 |
| DRIVER'S WAGES, ALL TRUCKS, CENTS PER MILE ∮ | 5.016 | 8.283 | 8.651 | 7.190 | 6.463 | 5.840 |
| Number of Trucks | 559 | 5,567 | 2,556 | 1,484 | 402 | 626 |
| Average Gross Weight | 3,922 | 6,926 | 11,087 | 17,607 | 21,922 | 36,028 |
| TAXES AND FEES, DOLLARS PER YEAR* | 39.96 | 48.56 | 86.74 | 170.40 | 191.80 | 331.14 |
| Number of Trucks | 582 | 7,508 | 2,441 | 1,952 | 366 | 585 |
| Average Gross Weight | 3,987 | 7,194 | 11,043 | 17,660 | 21,940 | 36,268 |
| GARAGE RENT, DOLLARS PER YEAR | 105.93 | 100.43 | 144.96 | 171.08 | 160.69 | 140.55 |
| Number of Trucks | 545 | 1,197 | 701 | 869 | 285 | 339 |
| Average Gross Weight | 3,728 | 6,795 | 12,398 | 18,231 | 21,741 | 36,860 |
| VEHICLE INSURANCE, ALL TRUCKS, DOLLARS PER YEAR | 88.87 | 77.78 | 201.71 | 201.96 | 306.75 | 227.41 |
| Number of Trucks | 947 | 7,404 | 2,019 | 1,808 | 448 | 723 |
| Average Gross Weight | 3,790 | 7,307 | 11,306 | 17,539 | 21,865 | 37,878 |
| GENERAL OVERHEAD, FOR HIRE TRUCKS, DOLLARS PER YEAR | 472 | 796 | 874 | 1,405 | 678 | 1,578 |
| Number of Trucks | 14 | 212 | 270 | 162 | 116 | 163 |
| Average Gross Weight | 3,887 | 7,301 | 12,250 | 17,128 | 22,131 | 39,871 |
| GENERAL OVERHEAD, PRIVATE TRUCKS, DOLLARS PER YEAR | 588 | 130 | 537 | 368 | 286 | 1,158 |
| Number of Trucks | 248 | 2,415 | 608 | 910 | 218 | 313 |
| Average Gross Weight | 4,150 | 8,148 | 12,617 | 17,755 | 21,949 | 36,849 |

∮ 1,028 For Hire Trucks at 5.9996 cents. 10,166 Private Trucks at 7.951 cents.
* Excluding gasoline and oil taxes.
# Based on Group Averages from Truck Questionnaire.

SECTION 49. COMMODITY LEVEL

Analysis 49.6 Highway Basic Unit Costs

| ITEM | RATED / ACTUAL / *OCCUPIED | TRUCK CAPACITY IN TONS (OF 2,000 POUNDS) 1 | 2 | 3 | 5 | 7.5 | 10 | 15 | 20 |
|---|---|---|---|---|---|---|---|---|---|
| | ACTUAL | 1.4 | 2.7 | 3.9 | 6.2 | 8.9 | 11.5 | 16.4 | 21 |
| | *OCCUPIED | 0.6 | 1.4 | 2.2 | 3.6 | 5.3 | 7.0 | 10.3 | 13.4 |
| AVERAGE MOTOR TRUCK OPERATING COSTS** | | | | | | | | | |
| VARIABLE | | | | | CENTS PER MILE | | | | |
| Fuel, less tax | | 1.31 | 1.87 | 2.31 | 3.01 | 3.70 | 4.30 | 5.30 | 6.15 |
| Oil, less tax | | .19 | .24 | .28 | .34 | .39 | .44 | .51 | .56 |
| Tires and tubes | | .52 | .84 | 1.11 | 1.58 | 2.09 | 2.55 | 3.37 | 4.11 |
| Maintenance, Labor | | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 |
| Maintenance, Materials | | .43 | .94 | 1.31 | 1.88 | 2.42 | 2.87 | 3.59 | 4.17 |
| Garage Miscellaneous, Labor | | .49 | .49 | .49 | .49 | .49 | .49 | .49 | .49 |
| Garage Miscellaneous, Materials | | .23 | .23 | .23 | .23 | .23 | .23 | .23 | .23 |
| Vehicle Depreciation | | 1.67 | 2.17 | 2.54 | 3.09 | 3.60 | 4.02 | 4.70 | 5.24 |
| Driver's Wages, for hire | | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| Driver's Wages, private | | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| Helper's Wages | | .11 | .19 | .26 | .38 | .52 | .65 | .88 | 1.10 |
| Fuel Tax (State, Federal, Local) | | .48 | .69 | .85 | 1.11 | 1.37 | 1.59 | 1.96 | 2.28 |
| Oil Tax (Federal) | | .03 | .06 | .09 | .14 | .20 | .27 | .39 | .50 |
| Variable License Fees, for hire / | | .01 | .02 | .02 | .03 | .03 | .03 | .04 | .04 |
| Total Variable Costs, for hire | | 12.63 | 14.91 | 16.65 | 19.44 | 22.22 | 24.59 | 28.61 | 32.03 |
| Total Variable Costs, private | | 14.60 | 16.85 | 18.56 | 21.29 | 24.02 | 26.32 | 30.22 | 33.53 |
| FIXED COSTS | | | | | DOLLARS PER YEAR | | | | |
| Garage Rent | | $ 110 | $ 126 | $ 136 | $ 150 | $ 162 | $ 171 | $ 185 | $ 195 |
| Vehicle Insurance, for hire | | 180 | 263 | 329 | 435 | 544 | 636 | 795 | 931 |
| Vehicle Insurance, private | | 135 | 197 | 247 | 326 | 408 | 477 | 596 | 698 |
| Interest on Vehicle Investment | | 32 | 56 | 77 | 116 | 161 | 202 | 279 | 351 |
| General Overhead, Payroll, for hire | | 478 | 622 | 727 | 885 | 1,033 | 1,153 | 1,346 | 1,502 |
| General Overhead, Payroll, Private | | 254 | 330 | 386 | 470 | 549 | 612 | 715 | 798 |
| General Overhead, Other, for hire | | 119 | 156 | 182 | 221 | 258 | 288 | 336 | 376 |
| General Overhead, Other, Private | | 63 | 83 | 97 | 117 | 137 | 153 | 179 | 200 |
| Net General Overhead, for hire // | | 352 | 428 | 473 | 522 | 547 | 551 | 528 | 478 |
| Licenses and Taxes, fixed | | 29 | 58 | 88 | 150 | 231 | 315 | 492 | 676 |
| Total Fixed Costs, for hire | | 948 | 1,281 | 1,539 | 1,958 | 2,388 | 2,766 | 3,432 | 4,031 |
| Total Fixed Costs, private | | 623 | 850 | 1,031 | 1,330 | 1,647 | 1,931 | 2,446 | 2,918 |
| Net Fixed Costs, for hire // | | 703 | 931 | 1,103 | 1,374 | 1,645 | 1,876 | 2,260 | 2,631 |
| MISCELLANEOUS AVERAGE STATISTICS** | | | | | | | | | |
| Gross Weight, throughout Annual Mileage, lbs. | | 5,571 | 9,467 | 12,909 | 19,096 | 26,027 | 32,426 | 44,226 | 55,112 |
| Vehicle Weight, tons | | 2.16 | 3.34 | 4.31 | 5.95 | 7.67 | 9.19 | 11.85 | 14.20 |
| Load carried, % of rated capacity | | 62.2% | 69.5% | 71.4% | 72.0% | 71.2% | 70.3% | 68.4% | 66.9% |
| Load carried, % of mfr's allowance | | 44.7% | 51.6% | 54.5% | 57.9% | 59.9% | 61.0% | 62.7% | 63.7% |
| Annual Mileage, for hire trucks | | 17,200 | 21,266 | 24,073 | 28,157 | 31,870 | 34,797 | 39,399 | 43,019 |
| Annual Mileage, private trucks | | 12,159 | 15,035 | 17,019 | 19,906 | 22,531 | 24,600 | 27,854 | 30,413 |
| Variable Costs, % of Total, for hire | | 69.6% | 71.2% | 72.3% | 73.7% | 74.8% | 75.6% | 76.7% | 77.4% |
| Variable Costs, % of Total, private | | 74.0% | 74.9% | 73.4% | 76.1% | 76.7% | 77.0% | 77.5% | 77.8% |
| Gasoline Consumption, Miles per gallon | | 9.6 | 6.7 | 5.4 | 4.2 | 3.4 | 3.1 | 2.4 | 2.0 |
| Oil Consumption, miles per quart | | 71.7 | 56.6 | 47.9 | 39.7 | 34.2 | 30.8 | 26.5 | 23.9 |
| Tire Price, Retail List | | $ 138 | $ 254 | $ 363 | $ 570 | $ 814 | $ 1,048 | $1,498 | $1,929 |
| Vehicle Price, less tires | | $1,078 | $1,870 | $ 2,582 | $3,881 | $ 5,356 | $ 6,731 | $9,294 | $11,685 |
| Vehicle Life, Miles (000) | | 65 | 86 | 102 | 126 | 149 | 167 | 198 | 223 |
| Vehicle Life, years, for hire | | 3.8 | 4.1 | 4.2 | 4.5 | 4.7 | 4.8 | 5.0 | 5.2 |
| Vehicle Life, years, private | | 5.3 | 5.7 | 6.0 | 6.3 | 6.6 | 6.8 | 7.1 | 7.3 |
| Road Franchise & License Taxes % of operating costs for hire # | | 3.3% | 4.4% | 5.1% | 6.1% | 7.0% | 7.7% | 8.8% | 9.6% |
| Road and License Taxes % of operating costs, private | | 3.1% | 4.0% | 4.7% | 5.7% | 6.0% | 7.3% | 8.4% | 9.2% |

/ Maximum load which can safely be carried habitually; i.e., manufacturer's allowable load.

* Average load throughout annual mileage.

/ Of extremely rare application to private trucks.

// Excluding pickup and delivery, platform, etc., not pertinent to rail carload comparisons.

# Including federal gasoline and oil taxes which though not levied for road purposes do not accrue save through road use.

**Unless otherwise specified figures apply to for hire and private trucks alike.



SECTION 49. COMMODITY LEVEL

Analysis 49.7 Mileage Scale of Highway Unit Costs

| ZONE TERMINAL | MILES | TONS CARRIED* 3 | 5 | 7-1/2 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AVERAGE COST PER NET TON CARRIED | | | | | | | | | | | | | |
| | 15 | $ 0.88 | $ 0.63 | $ 0.49 | $ 0.41 | $ 0.33 | $ 0.28 | $ 0.35 | $ 0.33 | $ 0.30 | $ 0.28 | $ 0.32 | $ 0.31 | $ 0.29 | $ 0.28 |
| 1 | 60 | 4.12 | 2.93 | 2.27 | 1.91 | 1.52 | 1.29 | 1.62 | 1.50 | 1.39 | 1.29 | 1.48 | 1.42 | 1.35 | 1.29 |
| 2 | 120 | 7.36 | 5.23 | 4.05 | 3.41 | 2.70 | 2.30 | 2.89 | 2.68 | 2.47 | 2.30 | 2.63 | 2.53 | 2.41 | 2.30 |
| 3 | 180 | 10.60 | 7.53 | 5.83 | 4.90 | 3.89 | 3.32 | 4.16 | 3.85 | 3.56 | 3.32 | 3.79 | 3.64 | 3.47 | 3.32 |
| 4 | 240 | 13.84 | 9.83 | 7.61 | 6.40 | 5.08 | 4.33 | 5.43 | 5.03 | 4.65 | 4.33 | 4.94 | 4.75 | 4.53 | 4.33 |
| 5 | 300 | 17.08 | 12.13 | 9.39 | 7.90 | 6.26 | 5.34 | 6.70 | 6.20 | 5.74 | 5.34 | 6.10 | 5.86 | 5.59 | 5.34 |
| 6 | 360 | $ 20.32 | $ 14.43 | $ 11.18 | $ 9.40 | $ 7.45 | $ 6.35 | $ 7.97 | $ 7.38 | $ 6.82 | $ 6.35 | $ 7.25 | $ 6.97 | $ 6.65 | $ 6.35 |
| 7 | 420 | 23.56 | 16.73 | 12.96 | 10.89 | 8.63 | 7.37 | 9.24 | 8.55 | 7.91 | 7.37 | 8.41 | 8.08 | 7.71 | 7.37 |
| 8 | 480 | 26.80 | 19.03 | 14.74 | 12.39 | 9.82 | 8.38 | 10.51 | 9.72 | 9.00 | 8.38 | 9.56 | 9.19 | 8.77 | 8.38 |
| 9 | 540 | 30.04 | 21.33 | 16.52 | 13.89 | 11.01 | 9.39 | 11.78 | 10.90 | 10.08 | 9.39 | 10.72 | 10.30 | 9.83 | 9.39 |
| 10 | 600 | 33.28 | 23.63 | 18.30 | 15.39 | 12.19 | 10.40 | 13.05 | 12.07 | 11.17 | 10.40 | 11.87 | 11.40 | 10.89 | 10.40 |
| 11 | 660 | $ 36.52 | $ 25.93 | $ 20.08 | $ 16.89 | $ 13.38 | $ 11.42 | $ 14.32 | $ 13.25 | $ 12.26 | $ 11.42 | $ 13.03 | $ 12.51 | $ 11.95 | $ 11.42 |
| 12 | 720 | 39.76 | 28.23 | 21.86 | 18.38 | 14.57 | 12.43 | 15.59 | 14.42 | 13.34 | 12.43 | 14.19 | 13.62 | 13.01 | 12.43 |
| 13 | 780 | 43.00 | 30.53 | 23.64 | 19.88 | 15.75 | 13.44 | 16.86 | 15.59 | 14.43 | 13.44 | 15.34 | 14.73 | 14.07 | 13.44 |
| 14 | 840 | 46.24 | 32.83 | 25.42 | 21.38 | 16.94 | 14.45 | 18.13 | 16.77 | 15.52 | 14.45 | 16.50 | 15.84 | 15.13 | 14.45 |
| 15 | 900 | 49.48 | 35.13 | 27.20 | 22.88 | 18.12 | 15.47 | 19.40 | 17.94 | 16.60 | 15.47 | 17.65 | 16.95 | 16.19 | 15.47 |
| 16 | 960 | $ 52.72 | $ 37.43 | $ 28.99 | $ 24.37 | $ 19.31 | $ 16.48 | $ 20.67 | $ 19.12 | $ 17.69 | $ 16.48 | $ 18.81 | $ 18.06 | $ 17.25 | $ 16.48 |
| 17 | 1020 | 55.96 | 39.73 | 30.77 | 25.87 | 20.50 | 17.49 | 21.94 | 20.29 | 18.78 | 17.49 | 19.97 | 19.17 | 18.31 | 17.49 |
| 18 | 1080 | 59.20 | 42.03 | 32.55 | 27.37 | 21.68 | 18.50 | 23.21 | 21.47 | 19.87 | 18.50 | 21.12 | 20.28 | 19.37 | 18.50 |
| 19 | 1140 | 62.44 | 44.33 | 34.33 | 28.87 | 22.87 | 19.52 | 24.48 | 22.64 | 20.95 | 19.52 | 22.28 | 21.39 | 20.43 | 19.52 |
| 20 | 1200 | 65.68 | 46.63 | 36.11 | 30.37 | 24.06 | 20.53 | 25.75 | 23.81 | 22.04 | 20.53 | 23.43 | 22.50 | 21.49 | 20.53 |
| 21 | 1260 | $ 68.92 | $ 48.93 | $ 37.89 | $ 31.86 | $ 25.24 | $ 21.54 | $ 27.02 | $ 24.99 | $ 23.13 | $ 21.54 | $ 24.59 | $ 23.61 | $ 22.55 | $ 21.54 |
| 22 | 1320 | 72.16 | 51.23 | 39.67 | 33.36 | 26.43 | 22.55 | 28.29 | 26.16 | 24.21 | 22.55 | 25.74 | 24.72 | 23.61 | 22.55 |
| 23 | 1380 | 75.40 | 53.53 | 41.45 | 34.86 | 27.61 | 23.57 | 29.56 | 27.34 | 25.30 | 23.57 | 26.90 | 25.83 | 24.67 | 23.57 |
| 24 | 1440 | 78.64 | 55.83 | 43.23 | 36.36 | 28.80 | 24.58 | 30.83 | 28.51 | 26.39 | 24.58 | 28.05 | 26.94 | 25.73 | 24.58 |
| 25 | 1500 | 81.87 | 58.13 | 45.01 | 37.85 | 29.99 | 25.59 | 32.10 | 29.68 | 27.47 | 25.59 | 29.21 | 28.05 | 26.79 | 25.59 |
| 26 | 1560 | $ 85.11 | $ 60.43 | $ 46.80 | $ 39.35 | $ 31.17 | $ 26.60 | $ 33.37 | $ 30.86 | $ 28.56 | $ 26.60 | $ 30.37 | $ 29.16 | $ 27.85 | $ 26.60 |
| 27 | 1620 | 88.35 | 62.74 | 48.58 | 40.85 | 32.36 | 27.62 | 34.64 | 32.03 | 29.65 | 27.62 | 31.52 | 30.27 | 28.91 | 27.62 |
| 28 | 1680 | 91.59 | 65.04 | 50.36 | 42.35 | 33.55 | 28.63 | 35.91 | 33.21 | 30.74 | 28.63 | 32.68 | 31.38 | 29.97 | 28.63 |
| 29 | 1740 | 94.83 | 67.34 | 52.14 | 43.85 | 34.73 | 29.64 | 37.18 | 34.38 | 31.82 | 29.64 | 33.83 | 32.49 | 31.03 | 29.64 |
| 30 | 1800 | 98.07 | 69.64 | 53.92 | 45.34 | 35.92 | 30.65 | 38.45 | 35.56 | 32.91 | 30.65 | 34.99 | 33.59 | 32.09 | 30.65 |
| 31 | 1860 | $ 101.31 | $ 71.94 | $ 55.70 | $ 46.84 | $ 37.11 | $ 31.67 | $ 39.72 | $ 36.73 | $ 34.00 | $ 31.67 | $ 36.14 | $ 34.70 | $ 33.15 | $ 31.67 |
| 32 | 1920 | 104.55 | 74.24 | 57.48 | 48.34 | 38.29 | 32.68 | 40.99 | 37.90 | 35.08 | 32.68 | 37.30 | 35.81 | 34.21 | 32.68 |
| 33 | 1980 | 107.79 | 76.54 | 59.26 | 49.84 | 39.48 | 33.69 | 42.26 | 39.08 | 36.17 | 33.69 | 38.45 | 36.92 | 35.27 | 33.69 |
| 34 | 2040 | 111.03 | 78.84 | 61.04 | 51.34 | 40.66 | 34.70 | 43.53 | 40.25 | 37.26 | 34.70 | 39.61 | 38.03 | 36.33 | 34.70 |
| 35 | 2100 | 114.27 | 81.14 | 62.82 | 52.83 | 41.85 | 35.72 | 44.80 | 41.43 | 38.34 | 35.72 | 40.77 | 39.14 | 37.39 | 35.72 |
| 36 | 2160 | $ 117.51 | $ 83.44 | $ 64.61 | $ 54.33 | $ 43.04 | $ 36.73 | $ 46.07 | $ 42.60 | $ 39.43 | $ 36.73 | $ 41.92 | $ 40.25 | $ 38.45 | $ 36.73 |
| 37 | 2220 | 120.75 | 85.74 | 66.39 | 55.83 | 44.22 | 37.74 | 47.34 | 43.78 | 40.52 | 37.74 | 43.08 | 41.36 | 39.51 | 37.74 |
| 38 | 2280 | 123.99 | 88.04 | 68.17 | 57.33 | 45.41 | 38.75 | 48.61 | 44.95 | 41.61 | 38.75 | 44.23 | 42.47 | 40.57 | 38.75 |
| 39 | 2340 | 127.23 | 90.34 | 69.95 | 58.82 | 46.60 | 39.77 | 49.88 | 46.12 | 42.69 | 39.77 | 45.39 | 43.58 | 41.63 | 39.77 |
| 40 | 2400 | 130.47 | 92.64 | 71.73 | 60.32 | 47.78 | 40.78 | 51.15 | 47.30 | 43.78 | 40.78 | 46.54 | 44.69 | 42.69 | 40.78 |
| 41 | 2460 | $ 133.71 | $ 94.94 | $ 73.51 | $ 61.82 | $ 48.97 | $ 41.79 | $ 52.42 | $ 48.47 | $ 44.87 | $ 41.79 | $ 47.70 | $ 45.80 | $ 43.75 | $ 41.79 |
| 42 | 2520 | 136.95 | 97.24 | 75.29 | 63.32 | 50.15 | 42.80 | 53.69 | 49.65 | 45.95 | 42.80 | 48.86 | 46.91 | 44.81 | 42.80 |
| 43 | 2580 | 140.19 | 99.54 | 77.07 | 64.82 | 51.34 | 43.82 | 54.96 | 50.82 | 47.04 | 43.82 | 50.01 | 48.02 | 45.87 | 43.82 |
| 44 | 2640 | 143.43 | 101.84 | 78.85 | 66.31 | 52.53 | 44.83 | 56.23 | 51.99 | 48.13 | 44.83 | 51.17 | 49.13 | 46.93 | 44.83 |
| 45 | 2700 | 146.67 | 104.14 | 80.63 | 67.81 | 53.71 | 45.84 | 57.50 | 53.17 | 49.21 | 45.84 | 52.32 | 50.24 | 47.99 | 45.84 |
| 46 | 2760 | $ 149.91 | $ 106.44 | $ 82.42 | $ 69.31 | $ 54.90 | $ 46.85 | $ 58.77 | $ 54.34 | $ 50.30 | $ 46.85 | $ 53.48 | $ 51.35 | $ 49.05 | $ 46.85 |
| 47 | 2820 | 153.15 | 108.74 | 84.20 | 70.81 | 56.09 | 47.87 | 60.04 | 55.52 | 51.39 | 47.87 | 54.63 | 52.46 | 50.11 | 47.87 |
| 48 | 2880 | 156.39 | 111.04 | 85.98 | 72.30 | 57.27 | 48.88 | 61.31 | 56.69 | 52.48 | 48.88 | 55.79 | 53.57 | 51.17 | 48.88 |
| 49 | 2940 | 159.63 | 113.34 | 87.76 | 73.80 | 58.46 | 49.89 | 62.58 | 57.87 | 53.56 | 49.89 | 56.94 | 54.68 | 52.23 | 49.89 |
| 50 | 3000 | 162.87 | 115.64 | 89.54 | 75.30 | 59.64 | 50.90 | 63.85 | 59.04 | 54.65 | 50.90 | 58.10 | 55.78 | 53.28 | 50.90 |

Note: Costs shown above are for fully loaded truck movements. To adjust costs for empty haul increase the costs shown by the percentage of empty haul to loaded haul. The terminal cost with allowance of 15 mile haul is for two terminals.

Source: Highway cost statistics, Analysis 49.5

* Loaded hauls (Manufacturers allowable load).

SECTION 49. COMMODITY LEVEL

Analysis 49.8 Synthetic Scales of 1932 Rail Charges per Car for Transportation of Rough and Raw Material Traffics

| RATING GROUP NO. | | CHARGES IN DOLLARS PER CAR 10 | 11 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COMMODITY | | SAND, STONE, GRAVEL | TIMBER | GRAIN | ANIMAL FEEDS | FRESH VEGE-TABLES | LIVE ANIMALS | DRY FUELS | CRUDE LIQUIDS | ORES | LUMBER | PERTI-LIZER |
| AVERAGE LOAD, NET TONS | | 55 | 32 | 40 | 23 | 14 | 11 | 51 | 34 | 53 | 25 | 31 |
| ZONE | MILES | | | | | | | | | | | |
| Terminal | 15 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 |
| 1 | 60 | 45/* | 41*/ | 54* | 41* | 45 | 41 | 51*/ | 51* | 50/* | 45* | 46*/ |
| 2 | 120 | 55 | 48 | 72/ | 47/ | 54* | 47* | 66 | 66/ | 64 | 54/ | 57 |
| 3 | 180 | 65 | 54 | 91 | 52 | 64 | 54 | 81 | 81 | 79 | 64 | 67 |
| 4 | 240 | 75 | 60 | 109 | 58/ | 73/ | 60/ | 96 | 97 | 94 | 74 | 78 |
| 5 | 300 | 85 | 66 | 127 | 64 | 83 | 66 | 112 | 112 | 108 | 83 | 88 |
| 6 | 360 | $ 95 | $ 72 | $ 146 | $ 70 | $ 92 | $ 72 | $ 127 | $ 128 | $ 123 | $ 93 | $ 99 |
| 7 | 420 | 105 | 78 | 164 | 75 | 102 | 78 | 142 | 143 | 137 | 102 | 110 |
| 8 | 480 | 115 | 84 | 183 | 81 | 111 | 84 | 158 | 158 | 152 | 112 | 120 |
| 9 | 540 | 125 | 90 | 201 | 87 | 121 | 90 | 173 | 174 | 167 | 122 | 131 |
| 10 | 600 | 135 | 97 | 219 | 92 | 130 | 96 | 188 | 189 | 181 | 131 | 142 |
| 11 | 660 | $ 145 | $ 103 | $ 238 | $ 98 | $ 140 | $ 102 | $ 204 | $ 205 | $ 196 | $ 141 | $ 152 |
| 12 | 720 | 155 | 109 | 256 | 104 | 149 | 108 | 219 | 220 | 211 | 150 | 163 |
| 13 | 780 | 165 | 115 | 275 | 110 | 159 | 114 | 234 | 236 | 225 | 160 | 173 |
| 14 | 840 | 175 | 121 | 293 | 115 | 168 | 120 | 250 | 251 | 240 | 170 | 184 |
| 15 | 900 | 185 | 127 | 312 | 121 | 178 | 127 | 265 | 266 | 254 | 179 | 195 |
| 16 | 960 | $ 194 | $ 133 | $ 330 | $ 127 | $ 187 | $ 133 | $ 280 | $ 282 | $ 269 | $ 189 | $ 205 |
| 17 | 1020 | 204 | 140 | 348 | 132 | 197 | 139 | 295 | 297 | 284 | 198 | 216 |
| 18 | 1080 | 214 | 146 | 367 | 138 | 206 | 145 | 311 | 313 | 298 | 208 | 226 |
| 19 | 1140 | 224 | 151 | 385 | 144 | 216 | 151 | 326 | 328 | 313 | 217 | 237 |
| 20 | 1200 | 234 | 158 | 404 | 150 | 225 | 157 | 341 | 343 | 327 | 227 | 248 |
| 21 | 1260 | $ 244 | $ 164 | $ 422 | $ 155 | $ 234 | $ 163 | $ 357 | $ 359 | $ 342 | $ 237 | $ 258 |
| 22 | 1320 | 254 | 170 | 440 | 161 | 244 | 169 | 372 | 374 | 357 | 246 | 269 |
| 23 | 1380 | 264 | 176 | 459 | 167 | 253 | 175 | 387 | 390 | 371 | 256 | 280 |
| 24 | 1440 | 274 | 182 | 477 | 172 | 263 | 181 | 403 | 405 | 386 | 265 | 290 |
| 25 | 1500 | 284 | 189 | 496 | 178 | 272 | 187 | 418 | 420 | 400 | 275 | 301 |
| 26 | 1560 | $ 294 | $ 195 | $ 514 | $ 184 | $ 282 | $ 193 | $ 433 | $ 436 | $ 415 | $ 285 | $ 311 |
| 27 | 1620 | 304 | 201 | 533 | 190 | 291 | 200 | 449 | 451 | 430 | 294 | 322 |
| 28 | 1680 | 314 | 207 | 551 | 195 | 301 | 206 | 464 | 467 | 444 | 304 | 333 |
| 29 | 1740 | 324 | 213 | 569 | 201 | 310 | 212 | 479 | 482 | 459 | 313 | 343 |
| 30 | 1800 | 334 | 219 | 588 | 207 | 320 | 218 | 494 | 497 | 473 | 323 | 354 |
| 31 | 1860 | $ 344 | $ 225 | $ 606 | $ 212 | $ 329 | $ 224 | $ 510 | $ 513 | $ 488 | $ 333 | $ 365 |
| 32 | 1920 | 354 | 232 | 625 | 218 | 339 | 230 | 525 | 528 | 503 | 342 | 375 |
| 33 | 1980 | 364 | 238 | 643 | 224 | 348 | 236 | 540 | 544 | 517 | 352 | 386 |
| 34 | 2040 | 374 | 244 | 662 | 230 | 358 | 242 | 556 | 559 | 532 | 361 | 396 |
| 35 | 2100 | 384 | 250 | 680 | 235 | 367 | 248 | 571 | 574 | 546 | 371 | 407 |
| 36 | 2160 | $ 393 | $ 256 | $ 698 | $ 241 | $ 377 | $ 254 | $ 586 | $ 590 | $ 561 | $ 380 | $ 418 |
| 37 | 2220 | 403 | 262 | 717 | 247 | 386 | 260 | 602 | 605 | 576 | 390 | 428 |
| 38 | 2280 | 413 | 268 | 735 | 252 | 396 | 267 | 617 | 621 | 590 | 400 | 439 |
| 39 | 2340 | 423 | 274 | 754 | 258 | 405 | 273 | 632 | 636 | 605 | 409 | 450 |
| 40 | 2400 | 433 | 281 | 772 | 264 | 415 | 279 | 648 | 651 | 619 | 419 | 460 |
| 41 | 2460 | $ 443 | $ 287 | $ 790 | $ 270 | $ 424 | $ 285 | $ 663 | $ 667 | $ 634 | $ 428 | $ 471 |
| 42 | 2520 | 453 | 293 | 809 | 275 | 434 | 291 | 678 | 682 | 649 | 438 | 481 |
| 43 | 2580 | 463 | 299 | 827 | 281 | 443 | 297 | 693 | 698 | 663 | 448 | 492 |
| 44 | 2640 | 473 | 305 | 846 | 287 | 453 | 303 | 709 | 713 | 678 | 457 | 502 |
| 45 | 2700 | 483 | 311 | 864 | 292 | 462 | 309 | 724 | 728 | 692 | 467 | 513 |
| 46 | 2760 | $ 493 | $ 317 | $ 883 | $ 298 | $ 472 | $ 315 | $ 739 | $ 744 | $ 707 | $ 476 | $ 524 |
| 47 | 2820 | 503 | 324 | 901 | 304 | 481 | 321 | 755 | 759 | 722 | 486 | 535 |
| 48 | 2880 | 513 | 330 | 919 | 310 | 491 | 327 | 770 | 775 | 736 | 496 | 545 |
| 49 | 2940 | 523 | 336 | 938 | 315 | 500 | 333 | 785 | 790 | 751 | 505 | 556 |
| 50 | 3000 | 533 | 342 | 956 | 321 | 510 | 340 | 801 | 805 | 765 | 515 | 566 |

* Point at which rail charge becomes less than highway cost, allowing 65% empty haul via highway.
/ Point at which rail charge becomes less than highway cost, allowing no empty haul via highway.



SECTION 49. COMMODITY LEVEL

Analysis 49.9 Synthetic Scales of 1932 Rail Charges per Car for Transportation of Semi-processed Material Traffics

| RATING GROUP NO. | | CHARGES IN DOLLARS PER CAR 30 | 31 | 32 | 33 | 34 | 36 | 37 | 38 |
|---|---|---|---|---|---|---|---|---|---|
| COMMODITY | | PRIMARY METALS | FIBRES | HIDES | RUBBER | SALT | PRIMARY PAPER | HORTI-CULTURAL | SCRAP |
| AVERAGE LOAD, NET TONS | | 50 | 13 | 23 | 34 | 29 | 25 | 24 | 41 |
| ZONE | MILES | | | | | | | | |
| Terminal | 15 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | 35 |
| 1 | 60 | 53*/ | 43 | 51 | 59* | 48* | 48* | 47* | 52*/ |
| 2 | 120 | 74 | 52* | 67* | 82/ | 60/ | 60/ | 60/ | 69 |
| 3 | 180 | 88 | 60 | 84/ | 106 | 72 | 73 | 72 | 86 |
| 4 | 240 | 106 | 68/ | 100 | 129 | 85 | 85 | 84 | 102 |
| 5 | 300 | 124 | 76 | 116 | 152 | 97 | 98 | 96 | 119 |
| 6 | 360 | $ 141 | $ 84 | $ 132 | $ 176 | $ 109 | $ 110 | $ 108 | $ 136 |
| 7 | 420 | 159 | 93 | 148 | 199 | 122 | 123 | 120 | 152 |
| 8 | 480 | 177 | 101 | 164 | 223 | 134 | 136 | 133 | 169 |
| 9 | 540 | 194 | 109 | 180 | 246 | 146 | 148 | 145 | 186 |
| 10 | 600 | 212 | 117 | 196 | 269 | 158 | 161 | 157 | 203 |
| 11 | 660 | $ 230 | $ 125 | $ 212 | $ 293 | $ 171 | $ 173 | $ 169 | $ 219 |
| 12 | 720 | 247 | 133 | 228 | 316 | 183 | 186 | 181 | 236 |
| 13 | 780 | 265 | 142 | 244 | 340 | 195 | 198 | 193 | 253 |
| 14 | 840 | 283 | 150 | 261 | 363 | 208 | 211 | 206 | 270 |
| 15 | 900 | 300 | 158 | 277 | 386 | 220 | 223 | 218 | 286 |
| 16 | 960 | $ 318 | $ 166 | $ 293 | $ 410 | $ 232 | $ 236 | $ 230 | $ 303 |
| 17 | 1020 | 336 | 175 | 309 | 433 | 245 | 248 | 242 | 320 |
| 18 | 1080 | 353 | 183 | 325 | 457 | 257 | 261 | 254 | 337 |
| 19 | 1140 | 371 | 191 | 341 | 481 | 269 | 273 | 266 | 353 |
| 20 | 1200 | 389 | 199 | 357 | 504 | 282 | 286 | 279 | 370 |
| 21 | 1260 | $ 406 | $ 207 | $ 373 | $ 527 | $ 294 | $ 298 | $ 291 | $ 386 |
| 22 | 1320 | 424 | 215 | 389 | 550 | 306 | 311 | 303 | 401 |
| 23 | 1380 | 442 | 224 | 405 | 574 | 319 | 323 | 315 | 420 |
| 24 | 1440 | 459 | 232 | 421 | 597 | 331 | 336 | 327 | 437 |
| 25 | 1500 | 477 | 240 | 437 | 621 | 343 | 349 | 339 | 454 |
| 26 | 1560 | $ 495 | $ 248 | $ 454 | $ 644 | $ 356 | $ 361 | $ 352 | $ 471 |
| 27 | 1620 | 512 | 256 | 470 | 667 | 368 | 374 | 364 | 487 |
| 28 | 1680 | 530 | 265 | 486 | 691 | 380 | 386 | 376 | 504 |
| 29 | 1740 | 548 | 273 | 502 | 714 | 393 | 399 | 388 | 521 |
| 30 | 1800 | 565 | 281 | 518 | 738 | 405 | 411 | 400 | 538 |
| 31 | 1860 | $ 583 | $ 289 | $ 534 | $ 761 | $ 417 | $ 424 | $ 412 | $ 554 |
| 32 | 1920 | 601 | 297 | 550 | 785 | 430 | 436 | 425 | 571 |
| 33 | 1980 | 618 | 306 | 566 | 808 | 442 | 449 | 437 | 588 |
| 34 | 2040 | 636 | 314 | 582 | 831 | 454 | 461 | 449 | 605 |
| 35 | 2100 | 654 | 322 | 598 | 855 | 466 | 474 | 461 | 621 |
| 36 | 2160 | $ 671 | $ 330 | $ 614 | $ 878 | $ 479 | $ 486 | $ 473 | $ 638 |
| 37 | 2220 | 689 | 338 | 631 | 902 | 491 | 499 | 485 | 655 |
| 38 | 2280 | 707 | 347 | 647 | 925 | 503 | 511 | 498 | 672 |
| 39 | 2340 | 724 | 355 | 663 | 948 | 516 | 524 | 510 | 688 |
| 40 | 2400 | 742 | 363 | 679 | 972 | 528 | 537 | 522 | 705 |
| 41 | 2460 | $ 760 | $ 371 | $ 695 | $ 995 | $ 540 | $ 549 | $ 534 | $ 722 |
| 42 | 2520 | 777 | 379 | 711 | 1,019 | 552 | 562 | 546 | 739 |
| 43 | 2580 | 795 | 387 | 727 | 1,042 | 565 | 574 | 559 | 755 |
| 44 | 2640 | 813 | 396 | 743 | 1,065 | 577 | 587 | 571 | 772 |
| 45 | 2700 | 830 | 404 | 759 | 1,089 | 590 | 599 | 583 | 789 |
| 46 | 2760 | $ 848 | $ 412 | $ 775 | $ 1,112 | $ 602 | $ 612 | $ 595 | $ 806 |
| 47 | 2820 | 866 | 420 | 791 | 1,136 | 614 | 624 | 607 | 822 |
| 48 | 2880 | 884 | 428 | 808 | 1,159 | 627 | 636 | 619 | 839 |
| 49 | 2940 | 901 | 437 | 824 | 1,183 | 639 | 649 | 632 | 856 |
| 50 | 3000 | 919 | 445 | 840 | 1,206 | 651 | 662 | 644 | 873 |

* Point at which rail charge becomes less than highway cost, allowing 65% empty haul via highway.
/ Point at which rail charge becomes less than highway cost, allowing no empty haul via highway.

SECTION 49. COMMODITY LEVEL

Analysis 49.10 Synthetic Scales of 1932 Rail Charges per Car for Transportation of Necessaries Traffics

| RATING GROUP NO. | | CHARGES IN DOLLARS PER CAR | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 40 | 41 | 42 | 43 | 44 | 45 | 46 |
| COMMODITY | | DRY VEGETABLES | EDIBLE LIQUIDS | EDIBLE ANIMAL PRODUCTS | MANUFACTURED FOODS | PROCESSED CEREALS | FURNISHINGS | TEXTILES AND LEATHER |
| AVERAGE LOAD, NET TONS | | 18 | 29 | 13 | 27 | 24 | 14 | 14 |
| ZONE | MILES | | | | | | | |
| Terminal | 15 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 |
| 1 | 60 | 46 | 50* | 47 | 51* | 42* | 45 | 46 |
| 2 | 120 | 56* | 65/ | 58* | 67/ | 48/ | 54* | 56* |
| 3 | 180 | 67 | 79 | 69 | 83 | 54 | 64 | 67 |
| 4 | 240 | 77/ | 94 | 81 | 99 | 61 | 73/ | 78 |
| 5 | 300 | 88 | 109 | 92 | 115 | 67 | 82 | 88/ |
| 6 | 360 | $ 98 | $ 124 | $ 103/ | $ 131 | $ 73 | $ 92 | $ 99 |
| 7 | 420 | 109 | 138 | 115 | 147 | 80 | 101 | 109 |
| 8 | 480 | 119 | 153 | 126 | 163 | 86 | 111 | 120 |
| 9 | 540 | 130 | 168 | 138 | 178 | 92 | 120 | 130 |
| 10 | 600 | 140 | 183 | 149 | 194 | 99 | 130 | 141 |
| 11 | 660 | $ 151 | $ 197 | $ 160 | $ 210 | $ 105 | $ 139 | $ 152 |
| 12 | 720 | 161 | 212 | 172 | 226 | 111 | 149 | 162 |
| 13 | 780 | 172 | 227 | 183 | 242 | 118 | 158 | 173 |
| 14 | 840 | 182 | 242 | 194 | 258 | 124 | 167 | 183 |
| 15 | 900 | 193 | 256 | 206 | 274 | 131 | 177 | 194 |
| 16 | 960 | $ 203 | $ 271 | $ 217 | $ 290 | $ 137 | $ 186 | $ 205 |
| 17 | 1020 | 204 | 286 | 229 | 306 | 143 | 196 | 215 |
| 18 | 1080 | 224 | 301 | 240 | 322 | 150 | 205 | 226 |
| 19 | 1140 | 235 | 315 | 251 | 338 | 156 | 215 | 236 |
| 20 | 1200 | 245 | 330 | 263 | 353 | 162 | 224 | 247 |
| 21 | 1260 | $ 256 | $ 345 | $ 274 | $ 369 | $ 169 | $ 234 | $ 257 |
| 22 | 1320 | 266 | 360 | 285 | 385 | 175 | 243 | 268 |
| 23 | 1380 | 277 | 374 | 297 | 401 | 181 | 252 | 279 |
| 24 | 1440 | 287 | 389 | 308 | 417 | 188 | 262 | 289 |
| 25 | 1500 | 298 | 404 | 319 | 433 | 194 | 271 | 300 |
| 26 | 1560 | $ 308 | $ 418 | $ 331 | $ 449 | $ 200 | $ 281 | $ 310 |
| 27 | 1620 | 319 | 433 | 342 | 465 | 207 | 290 | 321 |
| 28 | 1680 | 329 | 448 | 354 | 481 | 213 | 300 | 332 |
| 29 | 1740 | 340 | 463 | 365 | 497 | 219 | 309 | 342 |
| 30 | 1800 | 350 | 477 | 376 | 513 | 226 | 319 | 353 |
| 31 | 1860 | $ 361 | $ 492 | $ 388 | $ 529 | $ 232 | $ 328 | $ 363 |
| 32 | 1920 | 371 | 507 | 399 | 544 | 238 | 337 | 374 |
| 33 | 1980 | 382 | 522 | 410 | 560 | 245 | 347 | 384 |
| 34 | 2040 | 392 | 536 | 422 | 576 | 251 | 356 | 395 |
| 35 | 2100 | 403 | 551 | 433 | 592 | 257 | 366 | 406 |
| 36 | 2160 | $ 413 | $ 566 | $ 444 | $ 608 | $ 264 | $ 375 | $ 416 |
| 37 | 2220 | 429 | 581 | 456 | 624 | 270 | 385 | 427 |
| 38 | 2280 | 434 | 595 | 467 | 640 | 277 | 394 | 437 |
| 39 | 2340 | 445 | 610 | 479 | 656 | 283 | 404 | 448 |
| 40 | 2400 | 455 | 625 | 490 | 672 | 289 | 413 | 458 |
| 41 | 2460 | $ 466 | $ 640 | $ 501 | $ 688 | $ 296 | $ 422 | $ 469 |
| 42 | 2520 | 476 | 654 | 513 | 704 | 302 | 432 | 480 |
| 43 | 2580 | 487 | 669 | 524 | 719 | 308 | 441 | 490 |
| 44 | 2640 | 497 | 684 | 535 | 735 | 315 | 451 | 501 |
| 45 | 2700 | 508 | 699 | 547 | 751 | 321 | 460 | 511 |
| 46 | 2760 | $ 518 | $ 713 | $ 558 | $ 767 | $ 327 | $ 470 | $ 522 |
| 47 | 2820 | 529 | 728 | 570 | 783 | 334 | 479 | 533 |
| 48 | 2880 | 539 | 743 | 581 | 799 | 340 | 489 | 543 |
| 49 | 2940 | 550 | 758 | 592 | 815 | 346 | 498 | 554 |
| 50 | 3000 | 560 | 772 | 604 | 831 | 353 | 507 | 564 |

* Point at which rail charge becomes less than highway cost, allowing 65% empty haul via highway.
/ Point at which rail charge becomes less than highway cost, allowing no empty haul via highway.



SECTION 49. COMMODITY LEVEL

Analysis 49.11 Synthetic Scales of 1932 Rail Charges per Car for Transportation of Auxiliaries Traffics

| RATING GROUP NO. | | CHARGES IN DOLLARS PER CAR | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 50 | 51 | 52 | 54 | 55 | 56 | 57 | 58 | 59 |
| COMMODITY | | MASONRY | POWER | LUBRICANTS | PRESERVATIVES | CHEMICALS IN TANKS | CHEMICALS PACKAGED | CLEANSERS AND ADHESIVES | EXPLOSIVES | MISCELLANEOUS |
| AVERAGE LOAD, NET TONS | | 32 | 28 | 22 | 31 | 41 | 21 | 21 | 16 | 20 |
| ZONE | MILES | | | | | | | | | |
| Terminal | 15 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 |
| 1 | 60 | 50* | 55* | 48 | 52* | 60* | 52 | 50 | 68 | 48 |
| 2 | 120 | 66/ | 74/ | 60* | 68/ | 84/ | 68* | 65* | 101 | 60* |
| 3 | 180 | 81 | 94 | 73/ | 85 | 108 | 84/ | 79 | 133 | 73 |
| 4 | 240 | 96 | 113 | 85 | 102 | 133 | 101 | 94/ | 166 | 85/ |
| 5 | 300 | 111 | 133 | 98 | 118 | 157 | 117/ | 108 | 199 | 98 |
| 6 | 360 | $ 126 | $ 152 | $ 110 | $ 135 | $ 181 | $ 133 | $ 123 | $ 231 | $ 110 |
| 7 | 420 | 141 | 171 | 123 | 152 | 206 | 150 | 138 | 264 | 122 |
| 8 | 480 | 156 | 191 | 135 | 168 | 230 | 166 | 152 | 296 | 135 |
| 9 | 540 | 172 | 210 | 148 | 185 | 254 | 182 | 167 | 330 | 147 |
| 10 | 600 | 187 | 230 | 160 | 201 | 279 | 199 | 182 | 362 | 160 |
| 11 | 660 | $ 202 | $ 249 | $ 173 | $ 218 | $ 303 | $ 215 | $ 196 | $ 394 | $ 172 |
| 12 | 720 | 217 | 269 | 185 | 235 | 327 | 231 | 211 | 427 | 185 |
| 13 | 780 | 232 | 288 | 198 | 251 | 352 | 248 | 226 | 460 | 198 |
| 14 | 840 | 247 | 308 | 210 | 268 | 376 | 264 | 240 | 492 | 210 |
| 15 | 900 | 263 | 327 | 223 | 284 | 400 | 280 | 255 | 525 | 222 |
| 16 | 960 | $ 278 | $ 347 | $ 235 | $ 301 | $ 425 | $ 297 | $ 269 | $ 558 | $ 234 |
| 17 | 1020 | 293 | 366 | 248 | 318 | 449 | 313 | 284 | 590 | 247 |
| 18 | 1080 | 308 | 386 | 260 | 334 | 473 | 329 | 299 | 623 | 259 |
| 19 | 1140 | 323 | 405 | 273 | 351 | 498 | 346 | 313 | 656 | 272 |
| 20 | 1200 | 338 | 424 | 285 | 367 | 522 | 362 | 328 | 688 | 284 |
| 21 | 1260 | $ 353 | $ 444 | $ 298 | $ 384 | $ 546 | $ 378 | $ 343 | $ 721 | $ 297 |
| 22 | 1320 | 369 | 463 | 310 | 401 | 571 | 395 | 357 | 754 | 309 |
| 23 | 1380 | 384 | 483 | 323 | 417 | 595 | 411 | 372 | 786 | 322 |
| 24 | 1440 | 399 | 502 | 335 | 434 | 619 | 427 | 386 | 819 | 334 |
| 25 | 1500 | 414 | 522 | 348 | 450 | 644 | 444 | 401 | 851 | 346 |
| 26 | 1560 | $ 429 | $ 541 | $ 360 | $ 467 | $ 668 | $ 460 | $ 416 | $ 884 | $ 359 |
| 27 | 1620 | 444 | 561 | 373 | 484 | 692 | 476 | 430 | 917 | 371 |
| 28 | 1680 | 459 | 580 | 385 | 500 | 717 | 493 | 445 | 949 | 384 |
| 29 | 1740 | 475 | 600 | 398 | 517 | 741 | 509 | 460 | 982 | 396 |
| 30 | 1800 | 490 | 619 | 410 | 533 | 765 | 525 | 474 | 1,015 | 409 |
| 31 | 1860 | $ 505 | $ 639 | $ 423 | $ 550 | $ 790 | $ 542 | $ 489 | $1,047 | $ 421 |
| 32 | 1920 | 520 | 658 | 435 | 567 | 814 | 558 | 504 | 1,080 | 434 |
| 33 | 1980 | 535 | 677 | 448 | 583 | 838 | 574 | 518 | 1,113 | 446 |
| 34 | 2040 | 550 | 697 | 460 | 600 | 863 | 591 | 533 | 1,145 | 459 |
| 35 | 2100 | 566 | 716 | 473 | 617 | 887 | 607 | 547 | 1,178 | 471 |
| 36 | 2160 | $ 581 | $ 736 | $ 485 | $ 633 | $ 911 | $ 623 | $ 562 | $1,211 | $ 484 |
| 37 | 2220 | 596 | 755 | 498 | 650 | 936 | 640 | 577 | 1,243 | 496 |
| 38 | 2280 | 611 | 775 | 510 | 666 | 960 | 656 | 591 | 1,276 | 508 |
| 39 | 2340 | 626 | 794 | 523 | 683 | 984 | 672 | 606 | 1,309 | 521 |
| 40 | 2400 | 641 | 814 | 535 | 700 | 1,009 | 681 | 621 | 1,341 | 533 |
| 41 | 2460 | $ 656 | $ 833 | $ 548 | $ 716 | $ 1,033 | $ 705 | $ 635 | $1,374 | $ 546 |
| 42 | 2520 | 672 | 853 | 560 | 733 | 1,057 | 721 | 650 | 1,406 | 558 |
| 43 | 2580 | 687 | 872 | 573 | 749 | 1,082 | 738 | 665 | 1,439 | 571 |
| 44 | 2640 | 702 | 892 | 585 | 766 | 1,106 | 754 | 679 | 1,472 | 582 |
| 45 | 2700 | 717 | 911 | 598 | 783 | 1,130 | 770 | 694 | 1,504 | 595 |
| 46 | 2760 | $ 732 | $ 930 | $ 610 | $ 799 | $ 1,155 | $ 787 | $ 708 | $1,537 | $ 608 |
| 47 | 2820 | 747 | 950 | 623 | 816 | 1,179 | 803 | 723 | 1,570 | 620 |
| 48 | 2880 | 763 | 969 | 635 | 832 | 1,203 | 819 | 738 | 1,602 | 633 |
| 49 | 2940 | 778 | 989 | 648 | 849 | 1,228 | 836 | 752 | 1,635 | 645 |
| 50 | 3000 | 793 | 1,008 | 660 | 866 | 1,252 | 852 | 767 | 1,668 | 658 |

* Point at which rail charge becomes less than highway cost, allowing 65% empty haul via highway.
/ Point at which rail charge becomes less than highway cost, allowing no empty haul via highway.

For Group 58 Rail Charge is always greater than highway cost.

SECTION 49. COMMODITY LEVEL

Analysis 49.12 Synthetic Scales of 1932 Rail Charges per Car for Transportation of Accessories Traffic

| RATING GROUP NO. | | CHARGES IN DOLLARS PER CAR 60 | 61 | 62 | 64 | 65 | 66 | 67 |
|---|---|---|---|---|---|---|---|---|
| COMMODITY | | FERROUS METAL | NON-FERROUS METALS | RUBBER | MACHINERY AND PARTS | VEHICLES AND PARTS | STATIONERY, PRINTING | PERSONAL |
| AVERAGE LOAD, NET TONS | | 31 | 30 | 13 | 18 | 11 | 23 | 18 |
| ZONE | MILES | | | | | | | |
| Terminal | 15 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | 35 |
| 1 | 60 | 56* | 55* | 48 | 50 | 48 | 47* | 53 |
| 2 | 120 | 76/ | 75/ | 60* | 65* | 60 | 60/ | 72* |
| 3 | 180 | 96 | 95 | 72 | 80 | 73* | 72 | 90 |
| 4 | 240 | 116 | 115 | 84 | 94 | 85 | 84 | 108 |
| 5 | 300 | 137 | 135 | 97 | 109 | 98 | 96 | 126 |
| 6 | 360 | $ 157 | $ 155 | $ 109 | $ 124 | $ 110 | $ 108 | 144 |
| 7 | 420 | 177 | 176 | 121/ | 138/ | 123 | 121 | 163 |
| 8 | 480 | 197 | 196 | 134 | 153 | 135 | 133 | 181 |
| 9 | 540 | 218 | 216 | 146 | 168 | 148 | 145 | 199 |
| 10 | 600 | 238 | 236 | 158 | 183 | 160/ | 157 | 217 |
| 11 | 660 | $ 258 | $ 256 | $ 170 | $ 197 | $ 173 | $ 169 | $ 235 |
| 12 | 720 | 278 | 276 | 183 | 212 | 185 | 182 | 254 |
| 13 | 780 | 299 | 296 | 195 | 227 | 198 | 194 | 272 |
| 14 | 840 | 319 | 316 | 207 | 242 | 210 | 206 | 290 |
| 15 | 900 | 339 | 336 | 219 | 256 | 222 | 218 | 308 |
| 16 | 960 | $ 359 | $ 356 | $ 232 | $ 271 | $ 235 | $ 230 | $ 326 |
| 17 | 1020 | 380 | 376 | 244 | 286 | 247 | 243 | 344 |
| 18 | 1080 | 400 | 396 | 256 | 301 | 260 | 255 | 363 |
| 19 | 1140 | 420 | 416 | 269 | 315 | 272 | 267 | 381 |
| 20 | 1200 | 440 | 436 | 281 | 330 | 285 | 279 | 399 |
| 21 | 1260 | $ 461 | $ 456 | $ 293 | $ 345 | $ 297 | $ 291 | $ 417 |
| 22 | 1320 | 481 | 476 | 305 | 359 | 310 | 304 | 435 |
| 23 | 1380 | 501 | 496 | 318 | 374 | 322 | 316 | 454 |
| 24 | 1440 | 521 | 516 | 330 | 389 | 335 | 328 | 472/ |
| 25 | 1500 | 542 | 536 | 342 | 404 | 347 | 340 | 490 |
| 26 | 1560 | $ 562 | $ 556 | $ 355 | $ 418 | $ 360 | $ 352 | $ 508 |
| 27 | 1620 | 582 | 576 | 367 | 433 | 372 | 365 | 526 |
| 28 | 1680 | 603 | 596 | 379 | 448 | 385 | 377 | 545 |
| 29 | 1740 | 623 | 616 | 391 | 463 | 397 | 389 | 563 |
| 30 | 1800 | 642 | 636 | 404 | 477 | 410 | 401 | 581 |
| 31 | 1860 | $ 663 | $ 656 | $ 416 | $ 492 | $ 422 | $ 413 | $ 599 |
| 32 | 1920 | 684 | 676 | 428 | 507 | 435 | 425 | 617 |
| 33 | 1980 | 704 | 696 | 441 | 522 | 447 | 438 | 636 |
| 34 | 2040 | 724 | 716 | 453 | 536 | 460 | 450 | 654 |
| 35 | 2100 | 744 | 737 | 465 | 551 | 472 | 462 | 672 |
| 36 | 2160 | $ 765 | $ 757 | $ 477 | $ 566 | $ 485 | $ 474 | $ 690 |
| 37 | 2220 | 785 | 777 | 490 | 581 | 497 | 486 | 708 |
| 38 | 2280 | 805 | 797 | 502 | 595 | 510 | 499 | 726 |
| 39 | 2340 | 825 | 817 | 514 | 610 | 522 | 511 | 745 |
| 40 | 2400 | 846 | 837 | 527 | 625 | 534 | 523 | 763 |
| 41 | 2460 | $ 866 | $ 857 | $ 539 | $ 639 | $ 547 | $ 535 | $ 781 |
| 42 | 2520 | 886 | 877 | 551 | 654 | 559 | 547 | 799 |
| 43 | 2580 | 906 | 897 | 563 | 669 | 572 | 560 | 817 |
| 44 | 2640 | 927. | 917 | 576 | 684 | 584 | 572 | 836 |
| 45 | 2700 | 947 | 937 | 588 | 698 | 597 | 584 | 854 |
| 46 | 2760 | $ 967 | $ 957 | $ 600 | $ 713 | $ 609 | $ 596 | $ 872 |
| 47 | 2820 | 987 | 977 | 613 | 728 | 622 | 608 | 890 |
| 48 | 2880 | 1,008 | 997 | 625 | 743 | 634 | 621 | 908 |
| 49 | 2940 | 1,028 | 1,017 | 637 | 757 | 647 | 633 | 927 |
| 50 | 3000 | 1,048 | 1,037 | 649 | 772 | 659 | 645 | 945 |

* Point at which rail charge becomes less than highway cost, allowing 65% empty haul via highway.
/ Point at which rail charge becomes less than highway cost, allowing no empty haul via highway.



SECTION 49. COMMODITY LEVEL

Analysis 49.13 Synthetic Scale of 1932 Rail Charges per Car of Eleven Most Important Individual Commodity Groups#

| STATISTICAL GROUP NUMBER | | CHARGES IN DOLLARS PER CAR 241 | 519 | 590 | 240 | 271 | 200 | 220 | 229 | 601 | 420 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATISTICAL COMMODITY | | BITUMINOUS COAL | GASOLINE ETC. | MISCELLANEOUS MANUFACTURES | ANTHRACITE COAL | LUMBER | WHEAT | CITRUS FRUITS | FRESH VEGETABLES | STRUCTURAL MATERIAL | FRESH MEAT | WHEAT FLOUR |
| PER CENT OF REVENUE PRODUCED | | 22% | 9% | 8% | 5% | 3% | 3% | 2% | 2% | 2% | 2% | 2% |
| AVERAGE LOAD, NET TONS | | 53 | 28 | 20 | 51 | 26 | 44 | 17 | 12 | 32 | 12 | 24 |
| ZONE | MILES | | | | | | | | | | | |
| Terminal | 15 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 |
| 1 | 60 | 50*/ | 55* | 48 | 57*/ | 46* | 57*/ | 47 | 43 | 56* | 45 | 42* |
| 2 | 120 | 65 | 74/ | 60* | 80 | 54/ | 78 | 59* | 50* | 77/ | 55* | 48/ |
| 3 | 180 | 80 | 94 | 72 | 102 | 64 | 99 | 71 | 59 | 98 | 65 | 54 |
| 4 | 240 | 94 | 113 | 85/ | 124 | 74 | 120 | 83 | 67/ | 119 | 75 | 61 |
| 5 | 300 | 109 | 133 | 99 | 146 | 83 | 142 | 95/ | 74 | 140 | 85/ | 67 |
| 6 | 360 | 124 | 152 | 110 | 168 | 93 | 163 | 107 | 82 | 161 | 95 | 73 |
| 7 | 420 | 139 | 171 | 122 | 191 | 102 | 184 | 119 | 90 | 181 | 105 | 79 |
| 8 | 480 | 153 | 192 | 135 | 213 | 112 | 205 | 131 | 98 | 202 | 115 | 86 |
| 9 | 540 | 168 | 210 | 147 | 235 | 122 | 227 | 143 | 106 | 223 | 125 | 92 |
| 10 | 600 | 183 | 230 | 160 | 257 | 131 | 248 | 155 | 114 | 244 | 135 | 98 |
| 11 | 660 | 198 | 249 | 172 | 279 | 141 | 269 | 167 | 122 | 265 | 145 | 105 |
| 12 | 720 | 213 | 269 | 185 | 301 | 150 | 291 | 179 | 129 | 286 | 155 | 111 |
| 13 | 780 | 227 | 288 | 197 | 324 | 160 | 312 | 191 | 137 | 307 | 165 | 117 |
| 14 | 840 | 242 | 308 | 210 | 346 | 169 | 333 | 203 | 145 | 328 | 175 | 124 |
| 15 | 900 | 257 | 327 | 222 | 368 | 179 | 354 | 214 | 153 | 349 | 185 | 130 |
| 16 | 960 | 272 | 347 | 234 | 390 | 189 | 376 | 226 | 161 | 369 | 195 | 136 |
| 17 | 1020 | 286 | 366 | 247 | 413 | 198 | 397 | 238 | 169 | 390 | 205 | 143 |
| 18 | 1080 | 301 | 386 | 259 | 434 | 208 | 418 | 250 | 176 | 411 | 215 | 149 |
| 19 | 1140 | 316 | 405 | 272 | 457 | 217 | 440 | 262 | 184 | 432 | 225 | 155 |
| 20 | 1200 | 331 | 424 | 284 | 479 | 227 | 461 | 274 | 192 | 453 | 235 | 162 |
| 21 | 1260 | 346 | 444 | 297 | 501 | 237 | 482 | 286 | 200 | 474 | 245 | 168 |
| 22 | 1320 | 360 | 463 | 309 | 523 | 246 | 503 | 298 | 208 | 495 | 255 | 174 |
| 23 | 1380 | 375 | 483 | 322 | 545 | 256 | 525 | 310 | 216 | 516 | 265 | 181 |
| 24 | 1440 | 390 | 502 | 334 | 568 | 265 | 546 | 322 | 223 | 537 | 275 | 187 |
| 25 | 1500 | 405 | 522 | 346 | 590 | 275 | 567 | 334 | 231 | 557 | 285 | 193 |
| 26 | 1560 | 419 | 541 | 359 | 612 | 285 | 588 | 346 | 239 | 578 | 295 | 200 |
| 27 | 1620 | 434 | 561 | 371 | 634 | 294 | 610 | 358 | 247 | 599 | 304 | 206 |
| 28 | 1680 | 449 | 580 | 384 | 656 | 304 | 631 | 370 | 255 | 620 | 314 | 212 |
| 29 | 1740 | 464 | 600 | 396 | 678 | 313 | 652 | 382 | 263 | 641 | 324 | 218 |
| 30 | 1800 | 479 | 619 | 409 | 701 | 323 | 674 | 394 | 270 | 662 | 334 | 225 |
| 31 | 1860 | 493 | 639 | 421 | 723 | 332 | 695 | 406 | 278 | 683 | 344 | 231 |
| 32 | 1920 | 508 | 658 | 434 | 745 | 342 | 716 | 418 | 286 | 704 | 354 | 237 |
| 33 | 1980 | 523 | 677 | 446 | 767 | 352 | 737 | 430 | 294 | 725 | 364 | 244 |
| 34 | 2040 | 538 | 696 | 459 | 789 | 361 | 759 | 442 | 302 | 745 | 374 | 250 |
| 35 | 2100 | 552 | 716 | 471 | 811 | 371 | 780 | 453 | 310 | 766 | 384 | 256 |
| 36 | 2160 | 567 | 735 | 483 | 834 | 380 | 801 | 465 | 318 | 787 | 394 | 263 |
| 37 | 2220 | 582 | 755 | 496 | 856 | 390 | 823 | 477 | 325 | 808 | 404 | 269 |
| 38 | 2280 | 597 | 774 | 508 | 878 | 400 | 844 | 489 | 333 | 829 | 414 | 275 |
| 39 | 2340 | 612 | 794 | 521 | 900 | 409 | 866 | 501 | 341 | 850 | 424 | 282 |
| 40 | 2400 | 626 | 813 | 533 | 922 | 419 | 886 | 513 | 349 | 871 | 434 | 288 |
| 41 | 2460 | 641 | 833 | 546 | 945 | 428 | 908 | 525 | 357 | 892 | 444 | 294 |
| 42 | 2520 | 656 | 852 | 558 | 967 | 438 | 929 | 537 | 365 | 913 | 454 | 301 |
| 43 | 2580 | 671 | 872 | 571 | 989 | 447 | 950 | 549 | 372 | 933 | 464 | 307 |
| 44 | 2640 | 685 | 891 | 583 | 1,011 | 457 | 971 | 561 | 380 | 954 | 474 | 313 |
| 45 | 2700 | 700 | 911 | 595 | 1,033 | 467 | 993 | 573 | 388 | 975 | 484 | 320 |
| 46 | 2760 | 715 | 930 | 608 | 1,055 | 476 | 1,014 | 585 | 396 | 996 | 494 | 326 |
| 47 | 2820 | 730 | 950 | 620 | 1,078 | 486 | 1,035 | 597 | 404 | 1,017 | 504 | 332 |
| 48 | 2880 | 744 | 969 | 633 | 1,100 | 495 | 1,057 | 609 | 412 | 1,038 | 514 | 339 |
| 49 | 2940 | 759 | 989 | 645 | 1,122 | 505 | 1,078 | 621 | 419 | 1,059 | 524 | 345 |
| 50 | 3000 | 774 | 1,008 | 658 | 1,144 | 515 | 1,099 | 633 | 427 | 1,080 | 534 | 351 |

* Point at which Rail Charge becomes less than highway cost, allowing 65% empty haul via highway.
/ Point at which Rail Charge becomes less than highway cost, allowing no empty haul via highway.
# Groups producing in excess of 1-1/2% of revenues.

SECTION 49. COMMODITY LEVEL

Analysis 49.14 Synthetic Scale of 1932 Rail Charges per Car of Eleven Important Individual Commodity Groups#

| STATISTICAL GROUP NUMBER | | 653 654 | 230 | 401 | 503 | 201 | 259 | 430 | 269 | 232 | 431 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATISTICAL COMMODITY | | AUTOMOBILES | KINE | POTATOES | CEMENT | CORN | ROAD AND FUEL OIL | CANNED GOODS | ORES | SWINE | SUGAR | SAND AND GRAVEL |
| PER CENT OF REVENUE PRODUCED | | 1.6% | 1.5% | 1.4% | 1.4% | 1.3% | 1.2% | 1.2% | 1.2% | 1.2% | 1.0% | 1.0% |
| AVERAGE LOAD, NET TONS | | 15 | 12 | 18 | 39 | 40 | 34 | 23 | 49 | 11 | 31 | 56 |
| ZONE | MILES | CHARGES IN DOLLARS PER CAR | | | | | | | | | | |
| Terminal | 15 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 | $ 35 |
| 1 | 60 | 47 | 42 | 46 | 57* | 54* | 53* | 49* | 50*/ | 41 | 54* | 44*/ |
| 2 | 120 | 59* | 41* | 56* | 79/ | 72/ | 70/ | 64 | 66 | 46* | 72/ | 53 |
| 3 | 180 | 71 | 54/ | 67 | 101 | 90 | 87 | 78/ | 81 | 52/ | 91 | 62 |
| 4 | 240 | 83 | 61 | 77/ | 123 | 109 | 105 | 92 | 96 | 57 | 109 | 71 |
| 5 | 300 | 94/ | 67 | 88 | 145 | 127 | 122 | 106 | 111 | 63 | 128 | 80 |
| 6 | 360 | 106 | 73 | 98 | 167 | 145 | 140 | 120 | 126 | 68 | 146 | 89 |
| 7 | 420 | 118 | 79 | 109 | 189 | 164 | 157 | 134 | 141 | 74 | 165 | 98 |
| 8 | 480 | 130 | 86 | 119 | 211 | 182 | 174 | 148 | 156 | 79 | 184 | 107 |
| 9 | 540 | 142 | 93 | 129 | 233 | 200 | 192 | 162 | 172 | 85 | 202 | 116 |
| 10 | 600 | 153 | 98 | 140 | 255 | 218 | 209 | 177 | 187 | 90 | 221 | 125 |
| 11 | 660 | 165 | 105 | 150 | 277 | 237 | 227 | 191 | 202 | 96 | 239 | 135 |
| 12 | 720 | 177 | 111 | 161 | 299 | 255 | 244 | 205 | 217 | 101 | 258 | 144 |
| 13 | 780 | 189 | 117 | 171 | 321 | 273 | 261 | 219 | 232 | 107 | 276 | 153 |
| 14 | 840 | 201 | 124 | 182 | 343 | 292 | 279 | 233 | 247 | 112 | 295 | 162 |
| 15 | 900 | 212 | 130 | 192 | 365 | 310 | 296 | 247 | 262 | 118 | 313 | 171 |
| 16 | 960 | 224 | 136 | 203 | 386 | 328 | 314 | 261 | 278 | 123 | 332 | 180 |
| 17 | 1020 | 236 | 143 | 213 | 408 | 347 | 331 | 275 | 293 | 129 | 350 | 189 |
| 18 | 1080 | 248 | 149 | 224 | 430 | 365 | 348 | 290 | 308 | 134 | 369 | 198 |
| 19 | 1140 | 260 | 155 | 234 | 452 | 383 | 366 | 304 | 323 | 140 | 387 | 207 |
| 20 | 1200 | 271 | 162 | 245 | 474 | 402 | 383 | 318 | 338 | 145 | 406 | 216 |
| 21 | 1260 | 283 | 168 | 255 | 496 | 420 | 401 | 332 | 353 | 151 | 425 | 225 |
| 22 | 1320 | 295 | 174 | 266 | 518 | 438 | 418 | 346 | 368 | 156 | 443 | 234 |
| 23 | 1380 | 307 | 180 | 276 | 540 | 457 | 435 | 360 | 384 | 162 | 462 | 243 |
| 24 | 1440 | 319 | 187 | 286 | 562 | 475 | 453 | 374 | 399 | 167 | 480 | 252 |
| 25 | 1500 | 331 | 193 | 297 | 584 | 493 | 470 | 389 | 414 | 173 | 499 | 261 |
| 26 | 1560 | 342 | 199 | 307 | 606 | 512 | 487 | 403 | 429 | 178 | 517 | 270 |
| 27 | 1620 | 354 | 206 | 318 | 628 | 530 | 505 | 417 | 444 | 184 | 536 | 279 |
| 28 | 1680 | 366 | 212 | 328 | 650 | 548 | 522 | 431 | 459 | 189 | 554 | 288 |
| 29 | 1740 | 378 | 218 | 339 | 672 | 567 | 540 | 445 | 475 | 195 | 573 | 297 |
| 30 | 1800 | 390 | 225 | 349 | 694 | 585 | 557 | 459 | 490 | 200 | 591 | 306 |
| 31 | 1860 | 401 | 231 | 360 | 716 | 603 | 574 | 473 | 505 | 206 | 610 | 315 |
| 32 | 1920 | 413 | 237 | 370 | 738 | 622 | 592 | 487 | 520 | 211 | 628 | 324 |
| 33 | 1980 | 425 | 244 | 381 | 760 | 640 | 609 | 502 | 535 | 217 | 647 | 333 |
| 34 | 2040 | 437 | 250 | 391 | 782 | 657 | 627 | 516 | 550 | 222 | 666 | 342 |
| 35 | 2100 | 449 | 256 | 402 | 803 | 677 | 644 | 530 | 565 | 228 | 684 | 351 |
| 36 | 2160 | 460 | 263 | 412 | 825 | 695 | 661 | 544 | 581 | 233 | 703 | 360 |
| 37 | 2220 | 472 | 269 | 422 | 847 | 713 | 679 | 558 | 596 | 239 | 721 | 369 |
| 38 | 2280 | 484 | 275 | 433 | 869 | 731 | 696 | 572 | 611 | 244 | 740 | 378 |
| 39 | 2340 | 496 | 281 | 443 | 891 | 750 | 714 | 586 | 626 | 250 | 758 | 387 |
| 40 | 2400 | 508 | 288 | 454 | 913 | 768 | 731 | 600 | 641 | 255 | 777 | 396 |
| 41 | 2460 | 520 | 294 | 464 | 935 | 786 | 748 | 615 | 656 | 261 | 795 | 405 |
| 42 | 2520 | 531 | 300 | 475 | 957 | 804 | 766 | 629 | 671 | 266 | 814 | 414 |
| 43 | 2580 | 543 | 307 | 485 | 979 | 823 | 783 | 643 | 687 | 272 | 832 | 423 |
| 44 | 2640 | 555 | 313 | 496 | 1,001 | 841 | 801 | 657 | 702 | 277 | 851 | 432 |
| 45 | 2700 | 567 | 319 | 506 | 1,023 | 860 | 818 | 671 | 717 | 283 | 869 | 441 |
| 46 | 2760 | 579 | 326 | 517 | 1,045 | 878 | 835 | 685 | 732 | 288 | 888 | 450 |
| 47 | 2820 | 590 | 331 | 527 | 1,067 | 896 | 853 | 699 | 747 | 294 | 907 | 459 |
| 48 | 2880 | 602 | 338 | 538 | 1,089 | 915 | 870 | 713 | 762 | 299 | 925 | 468 |
| 49 | 2940 | 614 | 345 | 548 | 1,111 | 933 | 887 | 728 | 777 | 305 | 944 | 477 |
| 50 | 3000 | 626 | 350 | 559 | 1,133 | 951 | 905 | 742 | 793 | 310 | 962 | 486 |

* Point at which Rail Charge becomes less than highway cost, allowing 65% empty haul via highway.
/ Point at which Rail Charge becomes less than highway cost, allowing no empty haul via highway.
# Groups producing 1% to 1-1/2% of revenues.



SECTION 49. COMMODITY LEVEL

Analysis 49.15 - Comparison of Carrier Rates for Transportation of Crude Petroleum between Points in Central Eastern Territory

| ORIGIN | DESTINATION | RAIL MILES | RATES IN CENTS PER HUNDRED POUNDS: RAILWAY 1932 | RAILWAY 1934 | PIPE LINE 1932 | PIPE LINE 1934 | RATIO OF PIPE LINE RATES TO RAIL RATES: 1932 | 1934 |
|---|---|---|---|---|---|---|---|---|
| AVERAGE MOVEMENT | | 268.0 | 24.8 | 23.8 | 7.38 | 7.38 | 30% | 31% |
| Bremen, Ohio | Bayway, New Jersey | 588.0 | 41.0 | 40.0 | 11.06 | 11.06 | 27 | 27 |
| Bremen, Ohio | Marcus Hook, Penna. | 523.0 | 38.0 | 37.0 | 11.06 | 11.06 | 29 | 29 |
| Killbuck, Ohio | Oil City, Penna. | 174.0 | 24.0 | 23.0 | 6.71 | 6.71 | 28 | 29 |
| Haydenville, Ohio | Carnegie, Penna. | 205.2 | 21.0 | 20.0 | 4.69 | 4.69 | 22 | 23 |
| Haydenville, Ohio | Titusville, Penna. | 295.7 | 24.0 | 23.0 | 7.88 | 7.88 | 33 | 34 |
| Killbuck, Ohio | Titusville, Penna. | 191.0 | 25.0 | 24.0 | 7.88 | 7.88 | 32 | 32 |
| Barnesville, Ohio | Oil City, Penna. | 184.0 | 20.0 | 19.0 | 6.71 | 6.71 | 34 | 35 |
| Barnesville, Ohio | Franklin, Penna. | 176.0 | 20.0 | 19.0 | 6.04 | 6.04 | 30 | 31 |
| Barnesville, Ohio | Pittsburgh, Penna.. | 92.0 | 16.0 | 15.0 | 4.69 | 4.69 | 29 | 31 |
| Black Run, Ohio | Parkersburg, W.Va. | 111.0 | 21.0 | 20.0 | 5.03 | 5.03 | 24 | 25 |
| Morgantown, W.Va. | Carnegie, Penna. | 104.0 | 16.0 | 15.0 | 4.69 | 4.69 | 29 | 31 |
| Morgantown, W.Va. | Pittsburgh, Penna. | 99.0 | 16.0 | 15.0 | 4.69 | 4.69 | 29 | 31 |
| Morgantown, W.Va. | Bayway, New Jersey | 429.0 | 29.0 | 28.0 | 11.06 | 11.06 | 38 | 39 |
| Morgantown, W.Va. | Franklin, Penna. | 199.0 | 20.0 | 19.0 | 6.04 | 6.04 | 30 | 31 |
| Morgantown, W.Va. | Oil City, Penna. | 209.0 | 21.0 | 20.0 | 6.71 | 6.71 | 32 | 33 |
| Morgantown, W.Va. | Titusville, Penna. | 226.0 | 21.0 | 20.0 | 7.88 | 7.88 | 38 | 39 |
| Martinsville, Ill. | Lima, Ohio | 239.0 | 28.0 | 27.0 | 7.08 | 7.08 | 25 | 26 |
| Stoy, Ill. | Cygnet, Ohio | 361.7 | 25.0 | 24.0 | 8.45 | 8.45 | 34 | 35 |
| Bridgeport, Ill. | Cygnet, Ohio | 317.0 | 25.0 | 24.0 | 8.45 | 8.45 | 34 | 35 |
| Martinsville, Ill. | East Sparta, Ohio | 395.0 | 33.0 | 32.0 | 10.14 | 10.14 | 31 | 31 |
| Bridgeport, Ill. | Toledo, Ohio | 342.0 | 25.0 | 24.0 | 9.81 | 9.81 | 39 | 40 |
| Owensboro, Ky. | Lawrenceville, Ill. | 102.0 | 26.0 | 25.0 | 4.02 | 4.02 | 15 | 16 |
| Preble, Ind. | Lima, Ohio | 48.9 | 16.0 | 15.0 | 2.68 | 2.68 | 17 | 17 |
| Point Breeze, Penna.* | Pittsburgh, Penna. | 360.0 | 32.0 | 31.0 | 10.39 | 10.39 | 32 | 33 |
| Point Breeze, Penna.* | Franklin, Penna. | 370.0 | 32.0 | 31.0 | 9.05 | 9.05 | 28 | 29 |
| Millway, Penna. | Bayway, New Jersey | 141.0 | 19.0 | 18.0 | 4.83 | 4.83 | 25 | 27 |
| Stoy, Ill. | Constable Hook, N.J. | 921.0 | 42.0 | 41.0 | 16.73 | 16.73 | 40 | 40 |
| Centerbridge, Penna.# | Bayway, New Jersey | 100.0 | 17.0 | 16.0 | 2.25 | 2.25 | 13 | 14 |

* Philadelphia, Penna.
# R.R. New Hope, Penna.

SECTION 49. COMMODITY LEVEL

Analysis 49.16 - Comparison of Carrier Rates for Transportation of Crude Petroleum from Kansas and Oklahoma Fields to Central East Territory

| ORIGIN | DESTINATION | RAIL MILES | RATES IN CENTS PER HUNDRED POUNDS | | | | RATIO OF PIPE LINE RATES TO RAIL RATES | |
|---|---|---|---|---|---|---|---|---|
| | | | RAILWAY | | PIPE LINE | | | |
| | | | 1932 | 1934 | 1932 | 1934 | 1932 | 1934 |
| AVERAGE MOVEMENT | | 805.6 | 36.4 | 35.4 | 16.59 | 14.70 | | |
| Walnut, Kansas | East Chicago, Ind. | 565.0 | 28.0 | 27.0 | 14.80 | 12.87 | 53% | 47% |
| Healdton, Okla. | East Chicago, Ind. | 914.9 | 30.0 | 29.0 | 14.80 | 14.80 | 49 | 51 |
| Wewoka, Okla. | East Chicago, Ind. | 798.8 | 30.0 | 29.0 | 14.80 | 14.80 | 49 | 51 |
| Healdton, Okla. | Toledo, Ohio | 1122.5 | 44.0 | 43.0 | 19.63 | 19.63 | 45 | 46 |
| Wewoka, Okla. | Toledo, Ohio | 951.6 | 44.0 | 43.0 | 19.63 | 19.63 | 45 | 46 |
| Healdton, Okla. | Wood River, Ill. | 646.8 | 25.0 | 24.0 | 11.99 | 11.99 | 48 | 50 |
| Wewoka, Okla. | Wood River, Ill. | 551.7 | 25.0 | 24.0 | 11.99 | 11.99 | 48 | 49 |
| Drumright, Okla. | Toledo (Bayshore), Ohio | 940.5 | 44.0 | 43.0 | 19.14 | 16.81 | 44 | 39 |
| Drumright, Okla. | Heath, Ohio | 926.8 | 46.0 | 45.0 | 20.27 | 17.86 | 44 | 40 |
| Drumright, Okla. | Charleston, W.Va. | 1020.8 | 47.5 | 46.5 | 20.83 | 18.34 | 44 | 39 |
| Drumright, Okla. | Springfield, Mo. | 239.0 | 22.5 | 21.5 | 8.85 | 7.88 | 39 | 35 |
| Drumright, Okla. | Int.Boundary,Port Huron,Mich. | 1012.8 | 49.0 | 48.0 | 20.11 | 17.70 | 41 | 37 |
| Drumright, Okla. | Cleveland, Ohio | 1013.8 | 47.5 | 46.5 | 20.11 | 17.70 | 42 | 38 |
| Hewitt, Okla. | Int.Boundary,Port Huron,Mich. | 1164.1 | 49.0 | 48.0 | 20.11 | 17.70 | 41 | 37 |
| Hewitt, Okla. | Cabin Creek, W.Va. | 1179.6 | 50.5 | 49.5 | 20.83 | 18.34 | 41 | 37 |
| Hewitt, Okla. | Heath, Ohio | 1267.2 | 46.0 | 45.0 | 20.27 | 17.86 | 44 | 40 |
| Oklahoma City,Okla. | Latonia, Ky. | 885.1 | 41.0 | 40.0 | 18.66 | 16.41 | 46 | 41 |
| Oklahoma City,Okla. | Cleveland, Ohio | 1054.3 | 47.5 | 46.5 | 20.11 | 17.70 | 42 | 38 |
| Oklahoma City,Okla. | Parkersburg, W.Va. | 1064.6 | 47.5 | 46.5 | 20.83 | 18.34 | 44 | 39 |
| Oklahoma City,Okla. | Lima, Ohio | 921.5 | 42.5 | 41.5 | 18.66 | 16.41 | 44 | 40 |
| Lucien, Okla. | Int.Boundary,Port Huron,Mich. | 1029.5 | 49.0 | 48.0 | 20.11 | 17.70 | 41 | 37 |
| Lucien, Okla. | Latonia, Ky. | 863.1 | 41.0 | 40.0 | 18.66 | 16.41 | 46 | 41 |
| Lucien, Okla. | Toledo (Bayshore), Ohio | 926.3 | 44.0 | 43.0 | 19.14 | 16.81 | 44 | 39 |
| Lucien, Okla. | Cleveland, Ohio | 1020.8 | 46.5 | 46.5 | 20.11 | 17.70 | 43 | 38 |
| Lucien, Okla. | Cabin Creek, W.Va. | 1070.8 | 50.5 | 49.5 | 20.83 | 18.34 | 41 | 37 |
| Lucien, Okla. | Parkersburg, W.Va. | 1041.6 | 47.5 | 46.5 | 20.84 | 18.34 | 44 | 39 |
| Lucien, Okla. | Heath, Ohio | 966.2 | 46.0 | 45.0 | 20.27 | 17.86 | 44 | 40 |
| Lucien, Okla. | Lima, Ohio | 888.0 | 42.5 | 41.5 | 18.66 | 16.41 | 42 | 40 |
| Arkansas City, Kan. | East Chicago, Ind. | 675.5 | 30.0 | 29.0 | 14.80 | 12.99 | 49 | 43 |
| Burleston, Texas | East Chicago, Ind. | 953.0 | 32.0 | 31.0 | 23.17 | 18.98 | 72 | 61 |
| Arkansas City, Kan. | Roxana, Ill. | 512.3 | 25.0 | 24.0 | 10.94 | 8.37 | 44 | 35 |
| Bartlesville, Okla. | Cleveland, Ohio | 909.0 | 47.5 | 46.5 | 20.11 | 17.70 | 42 | 38 |
| Bartlesville, Okla. | East Chicago, Ind. | 641.0 | 30.0 | 29.0 | 14.80 | 13.19 | 50 | 45 |
| Bartlesville, Okla. | Kansas City, Kan. | 193.9 | 21.0 | 20.0 | 9.89 | 8.29 | 47 | 41 |
| Bartlesville, Okla. | Charleston, W.Va. | 939.0 | 47.5 | 46.5 | 20.83 | 18.34 | 44 | 39 |
| Drumright, Okla. | Sugar Creek, Mo. | 297.8 | 22.5 | 20.5 | 9.89 | 8.29 | 44 | 40 |
| Eldorado, Kan. | Sugar Creek, Mo. | 187.5 | 10.0 | 9.0 | 9.89 | 8.29 | 99 | 92 |
| Drumright, Okla. | Whiting, Ind. | 761.8 | 30.0 | 29.0 | 14.80 | 13.19 | 49 | 45 |
| Eldorado, Kan. | Whiting, Ind. | 708.4 | 30.0 | 29.0 | 14.80 | 13.19 | 49 | 45 |
| Drumright, Okla. | Wood River, Ill. | 498.9 | 25.0 | 24.0 | 11.99 | 10.38 | 48 | 43 |
| Eldorado, Kan. | Wood River, Ill. | 445.9 | 25.0 | 24.0 | 11.99 | 10.38 | 48 | 43 |
| Devol, Okla. | Sugar Creek, Mo. | 479.0 | 28.5 | 27.5 | 9.89 | 8.29 | 35 | 30 |
| Devol, Okla. | Whiting, Ind. | 920.0 | 37.0 | 36.0 | 14.80 | 13.19 | 40 | 36 |
| Oklahoma City,Okla. | Lawrenceville, Ill. | 682.2 | 30.0 | 29.0 | 14.80 | 12.87 | 49 | 44 |
| Oklahoma City,Okla. | Lockport, Ill. | 754.4 | 30.0 | 29.0 | 14.80 | 12.87 | 49 | 44 |
| Oklahoma City,Okla. | East Chicago, Ind. | 784.2 | 30.0 | 29.0 | 14.80 | 12.87 | 49 | 44 |
| Oklahoma City,Okla. | Lemont, Ill. | 765.0 | 30.0 | 29.0 | 14.80 | 12.87 | 49 | 44 |
| Cushing, Okla. | Lawrenceville, Ill. | 686.0 | 30.0 | 29.0 | 14.80 | 12.87 | 49 | 44 |
| Cushing, Okla. | East Chicago, Ind. | 765.0 | 30.0 | 29.0 | 14.80 | 12.87 | 49 | 44 |
| Seminole, Okla. | East Chicago, Ind. | 811.3 | 30.0 | 29.0 | 14.80 | 12.87 | 49 | 44 |
| Seminole, Okla. | Lawrenceville, Ill. | 668.0 | 30.0 | 29.0 | 14.80 | 12.87 | 49 | 44 |



SECTION 49. COMMODITY LEVEL

Analysis 49.17 - Comparison of Carrier Rates for Transportation of Crude Petroleum from Texas Fields to Western Trunk Line and East Central Territory

| ORIGIN | DESTINATION | RAIL MILES | RATES IN CENTS PER HUNDRED POUNDS | | | | RATIO OF PIPE LINE RATES TO RAIL RATES | |
|---|---|---|---|---|---|---|---|---|
| | | | RAILWAY | | PIPE LINE | | | |
| | | | 1932 | 1934 | 1932 | 1934 | 1932 | 1934 |
| AVERAGE MOVEMENT | | 861.5 | 36.9 | 36.5 | 20.4 | 19.1 | 55% | 52% |
| Big Sandy, Texas | Neville Island, Penna. | 1156.5 | 51.5 | 51.5 | 22.44 | 22.44 | 44 | 43 |
| Big Sandy, Texas | Toledo (Bayshore), Ohio | 993.0 | 45.0 | 45.0 | 20.75 | 20.75 | 46 | 46 |
| Big Sandy, Texas | Cleves, Ohio | 869.1 | 42.0 | 42.0 | 20.27 | 20.27 | 48 | 48 |
| Eldorado, Kansas | Neville Island, Penna. | 1029.3 | 49.0 | 49.5 | 20.83 | 20.83 | 43 | 42 |
| Eldorado, Kansas | Toledo (Bayshore), Ohio | 826.8 | 42.5 | 43.0 | 19.14 | 19.14 | 45 | 45 |
| Eldorado, Kansas | Cleves, Ohio | 752.9 | 39.5 | 40.0 | 18.66 | 18.66 | 47 | 47 |
| Van, Texas | Toledo (Bayshore), Ohio | 1040.0 | 45.0 | 45.0 | 25.58 | 25.58 | 57 | 57 |
| Longview, Texas | Toledo (Bayshore), Ohio | 976.0 | 45.0 | 45.0 | 25.58 | 25.58 | 57 | 57 |
| Longview, Texas | Cleveland, Ohio | 1047.0 | 48.5 | 48.5 | 26.54 | 26.54 | 55 | 55 |
| Longview, Texas | Int.Boundary,Port Huron,Mich. | 1083.0 | 50.0 | 50.0 | 26.54 | 26.54 | 53 | 53 |
| Longview, Texas | Heath, Ohio | 975.0 | 47.0 | 47.0 | 26.71 | 26.71 | 57 | 57 |
| Longview, Texas | Parkersburg, W.Va. | 1030.8 | 48.5 | 48.5 | 27.27 | 27.27 | 56 | 56 |
| Longview, Texas | Charleston, W.Va. | 1011.6 | 48.5 | 48.5 | 27.27 | 27.27 | 56 | 56 |
| Longview, Texas | Cedin Creek, W.Va. | 1023.8 | 51.5 | 51.5 | 27.27 | 27.27 | 53 | 53 |
| Longview, Texas | Latonia, Ky. | 841.0 | 42.0 | 42.0 | 25.10 | 25.10 | 60 | 60 |
| Longview, Texas | Lima, Ohio | 905.7 | 43.5 | 43.5 | 25.10 | 25.10 | 57 | 58 |
| Burleson, Texas | Roxana, Ill. | 709.0 | 27.5 | 26.5 | 19.21 | 15.12 | 70 | 57 |
| Hensley, Texas | Kansas City, Kansas | 549.5 | 24.5 | 23.5 | 9.89 | 9.89 | 40 | 42 |
| Tiffin, Texas | Kansas City, Kansas | 598.0 | 26.0 | 25.0 | 9.89 | 9.89 | 38 | 39 |
| Troup, Texas | Coffeyville, Kansas | 400.4 | 17.5 | 27.0 | 11.26 | 11.26 | 64 | 41 |
| Troup, Texas | East Chicago, Indiana | 862.5 | 32.0 | 31.0 | 21.24 | 21.24 | 66 | 68 |
| Troup, Texas | Kansas City, Kansas | 558.5 | 24.5 | 23.5 | 16.33 | 16.33 | 67 | 69 |
| Longview, Texas | Sugar Creek, Mo. | 578.4 | 21.0 | 20.0 | 16.33 | 10.78 | 78 | 53 |
| Longview, Texas | Whiting, Ind. | 841.7 | 32.0 | 31.0 | 21.24 | 15.69 | 66 | 50 |
| Bullock, Texas | Sugar Creek, Mo. | 531.7 | 24.5 | 23.5 | 13.11 | 9.89 | 54 | 42 |
| Bullock, Texas | Whiting, Ind. | 1059.9 | 32.0 | 31.0 | 18.02 | 14.80 | 56 | 47 |
| Wickett, Texas | Whiting, Ind. | 1244.7 | 33.5 | 32.5 | 22.52 | 19.31 | 67 | 59 |
| Mexia, Texas | Sugar Creek, Mo. | 567.1 | 24.5 | 23.5 | 9.89 | 9.89 | 40 | 42 |
| Mexia, Texas | Whiting, Ind. | 992.5 | 32.0 | 31.0 | 14.80 | 14.80 | 46 | 47 |
| Wickett, Texas | Wood River, Ill. | 1035.9 | 28.5 | 27.5 | 19.51 | 16.09 | 68 | 58 |
| Reeds, Texas | Lawrenceville, Ill. | 665.4 | 34.0 | 31.0 | 21.24 | 17.70 | 62 | 57 |
| Reeds, Texas | East Chicago, Indiana | 844.5 | 32.0 | 31.0 | 21.24 | 17.70 | 66 | 57 |
| Reeds, Texas | Lemont, Illinois | 847.2 | 34.0 | 31.0 | 21.24 | 17.70 | 62 | 57 |
| Reeds, Texas | Lockport, Illinois | 839.6 | 34.0 | 31.0 | 21.24 | 17.70 | 62 | 57 |

SECTION 49. COMMODITY LEVEL

Analysis 49.18 Comparison of Carrier Rates for Transportation of Crude Petroleum from Mid-Continent Fields to Gulf Ports and Southwest

| ORIGIN | DESTINATION | RAIL MILES | RATES IN CENTS PER HUNDRED POUNDS: RAILWAY 1932 | RAILWAY 1934 | PIPE LINE 1932 | PIPE LINE 1934 | RATIO OF PIPE LINE RATES TO RAIL RATES: 1932 | 1934 |
|---|---|---|---|---|---|---|---|---|
| AVERAGE MOVEMENT | | 387.9 | 21.3 | 20.6 | 9.38 | 8.61 | 44% | 42% |
| Longview, Tex. | Port Arthur, Tex. | 222.6 | 13.0 | 8.8 | 7.24 | 7.24 | 56 | 82 |
| Longview, Tex. | Houston, Tex. | 221.7 | 9.7 | 8.8 | 7.24 | 7.24 | 75 | 83 |
| Hobbs, New Mexico | Arteco, Tex. | 757.6 | 28.5 | 27.5 | 8.85 | 8.04 | 41 | 29 |
| Wink, Tex. | Arteco, Tex. | 692.7 | 28.5 | 27.5 | 8.85 | 8.04 | 41 | 29 |
| Longview, Tex. | Shreveport, La. | 63.7 | 7.7 | 6.6 | 4.83 | 4.83 | 63 | 73 |
| Longview, Tex. | Smackover, Ark. | 190.5 | 21.0 | 20.0 | 4.83 | 4.83 | 23 | 24 |
| Walnut, Kan. | Cushing, Okla. | 165.0 | 20.0 | 19.0 | 2.57 | 2.57 | 13 | 13 |
| Oklahoma City, Okla. | Port Arthur, Tex. | 503.5 | 33.0 | 32.0 | 12.07 | 10.46 | 37 | 33 |
| Oklahoma City, Okla. | Houston, Tex. | 464.0 | 31.5 | 20.0 | 12.07 | 10.46 | 38 | 52 |
| Eldorado, Kan. | Fort Worth, Tex. | 379.7 | 28.0 | 27.0 | 12.87 | 12.87 | 46 | 48 |
| Eldorado, Kan. | Port Arthur, Tex. | 675.3 | 23.0 | 37.5 | 16.89 | 16.89 | 73 | 45 |
| Pawnee, Okla. | Fort Worth, Tex. | 281.7 | 25.0 | 20.0 | 6.44 | 6.44 | 26 | 32 |
| Pawnee, Okla. | Port Arthur, Tex. | 560.3 | 34.5 | 33.5 | 10.46 | 10.46 | 30 | 31 |
| Caddo, La. | Port Arthur, Tex. | 246.9 | 16.0 | 11.0 | 7.24 | 7.24 | 45 | 65 |
| De Soto, La. | Port Arthur, Tex. | 212.0 | 15.0 | 11.0 | 7.24 | 7.24 | 48 | 65 |
| Homer, La. | Port Arthur, Tex. | 261.9 | 17.5 | 16.5 | 9.65 | 9.65 | 55 | 58 |
| Eldorado, Ark. | Port Arthur, Tex. | 310.0 | 17.0 | 16.0 | 10.46 | 10.46 | 62 | 65 |
| Vinton, La. | Port Arthur, Tex. | 56.1 | 10.0 | 9.0 | 4.83 | 4.83 | 48 | 54 |
| Winkler, Tex.* | Baytown, Tex. | 248.2 | 12.0 | 12.0 | 8.85 | 8.04 | 74 | 67 |
| Winkler, Tex.* | Texas City, Tex. | 229.6 | 12.0 | 12.0 | 8.85 | 8.04 | 74 | 67 |
| Pecos, Tex. | Ingleside, Tex. | 694.4 | 27.5 | 26.5 | 8.04 | 8.04 | 29 | 30 |
| Big Spring, Tex. | Baytown, Tex. | 505.6 | 21.0 | 20.0 | 8.85 | 8.04 | 42 | 40 |
| Van, Tex. | Anchorage, La. | 349.6 | 23.5 | 22.5 | 6.44 | 6.44 | 27 | 28 |
| Healdton, Okla. | Beaumont, Tex. | 425.0 | 19.0 | 18.0 | 11.26 | 11.26 | 59 | 63 |
| Wewoka, Okla. | Beaumont, Tex. | 446.4 | 21.1 | 20.0 | 12.07 | 12.07 | 57 | 60 |
| Kings Mill, Tex. | Beaumont, Tex. | 659.9 | 21.0 | 20.0 | 12.07 | 12.07 | 57 | 60 |
| Kings Mill, Tex. | Magnetco, Tex. | 666.2 | 22.5 | 21.5 | 12.07 | 12.07 | 54 | 56 |
| Crescent, Okla. | Anchorage, La. | 737.9 | 40.0 | 39.0 | 12.07 | 10.62 | 30 | 27 |
| Drumright, Okla. | Anchorage, La. | 631.6 | 37.0 | 36.0 | 12.07 | 10.62 | 33 | 30 |
| Quinola, Okla. | Anchorage, La. | 666.4 | 33.0 | 32.0 | 14.24 | 12.55 | 43 | 39 |
| Ralston, Okla. | Anchorage, La. | 656.6 | 38.0 | 37.0 | 13.51 | 11.90 | 36 | 32 |
| Drumright, Okla. | Arkansas City, Kan. | 107.0 | 16.0 | 15.0 | 8.04 | 4.83 | 50 | 32 |
| Burleson, Tex. | Arkansas City, Kan. | 340.0 | 26.5 | 25.5 | 16.09 | 9.65 | 61 | 37 |
| Kings Mill, Tex. | Sinco) Tex. City) Tex. | 597.9 | 21.0 | 20.0 | 12.07 | 12.07 | 57 | 60 |
| Ringling, Okla. | Sinco) Rates ) Tex. | 393.4 | 19.0 | 18.0 | 8.04 | 8.04 | 42 | 45 |
| Kings Mill, Tex. | Fort Worth, Tex. | 337.2 | 16.0 | 16.0 | 5.47 | 5.47 | 34 | 34 |
| Henley, Tex. | Smith's Bluff, Tex. | 403.2 | 30.0 | 29.0 | 8.85 | 8.85 | 30 | 31 |
| Tiffin, Tex. | Smith's Bluff, Tex. | 411.1 | 21.5 | 20.5 | 8.85 | 8.85 | 41 | 43 |
| Troup, Tex. | Fort Worth, Tex. | 156.9 | 19.0 | 18.0 | 4.83 | 4.83 | 25 | 26 |
| Troup, Tex. | Smith's Bluff, Tex. | 194.0 | 20.0 | 19.0 | 5.63 | 5.63 | 28 | 29 |
| Smackover, Ark. | Anchorage, La. | 260.0 | 13.0 | 22.5 | 14.48 | 14.48 | 111 | 64 |
| Smackover, Ark. | Grand Lake (RR Su- | 163.4 | 17.0 | 16.0 | 6.44 | 6.44 | 38 | 40 |
| Strong, Ark. | Grand Lake (dora) Kan. | 127.6 | 18.5 | 16.5 | 4.83 | 4.83 | 26 | 19 |
| Mandville, Ark. | Anchorage, La. | 301.3 | 26.0 | 25.0 | 9.65 | 9.65 | 37 | 38 |
| Nettleton, Tex.# | Okmulgee, Okla. | 345.6 | 27.5 | 26.5 | 9.65 | 9.65 | 35 | 36 |
| Bradford, Tex. ∮ | Port Arthur, Tex. | 202.2 | 12.0 | 12.0 | 4.83 | 4.83 | 40 | 40 |
| Nettleton, Tex.# | Port Arthur, Tex. | 218.6 | 21.5 | 14.0 | 4.83 | 4.83 | 22 | 34 |
| Shreveport, La. | Port Arthur, Tex. | 221.9 | 14.0 | 13.0 | 7.24 | 6.44 | 52 | 50 |
| Louann, Ark. | Port Arthur, Tex. | 327.9 | 15.0 | 26.5 | 10.46 | 8.85 | 70 | 33 |
| Kings Mill, Tex. | Port Arthur, Tex. | 675.3 | 22.5 | 21.5 | 12.07 | 10.46 | 54 | 49 |
| Kings Mill, Tex. | Houston, Tex. | 597.9 | 21.0 | 20.0 | 12.07 | 10.46 | 57 | 52 |
| Joiner, Tex. | Port Arthur, Tex. | 204.2 | 17.5 | 17.5 | 4.83 | 4.83 | 28 | 28 |
| Joiner, Tex. | Houston, Tex. | 101.2 | 14.0 | 14.0 | 4.83 | 4.83 | 35 | 35 |
| Greta, Tex. | Ingleside, Tex. | 52.7 | 16.0 | 14.0 | 4.02 | 3.22 | 25 | 23 |
| Cushing, Okla. | (West) Dallas, Tex. | 256.0 | 15.5 | 15.5 | 6.44 | 5.63 | 42 | 36 |
| Cushing, Okla. | Houston, Tex. | 504.0 | 16.0 | 16.0 | 12.07 | 10.46 | 75 | 65 |
| Cushing, Okla. | Port Arthur, Tex. | 528.0 | 16.0 | 16.0 | 12.07 | 10.46 | 75 | 65 |
| West Tulsa, Okla. | Houston, Tex. | 516.0 | 19.0 | 18.0 | 12.07 | 10.46 | 64 | 58 |
| West Tulsa, Okla. | Port Arthur, Tex. | 545.2 | 19.0 | 18.0 | 12.07 | 10.46 | 64 | 58 |
| Okmulgee, Okla. | Houston, Tex. | 472.6 | 19.0 | 18.0 | 12.07 | 10.46 | 64 | 58 |
| Okmulgee, Okla. | Port Arthur, Tex. | 501.7 | 19.0 | 18.0 | 12.07 | 10.46 | 64 | 58 |
| Burbank, Okla. | Houston, Tex. | 555.0 | 34.5 | 33.5 | 14.48 | 10.46 | 42 | 31 |
| Burbank, Okla. | Port Arthur, Tex. | 584.3 | 35.5 | 34.5 | 14.48 | 10.46 | 41 | 30 |

* R.R. Corsicana, Tex. # R.R. Jonesville, Tex. ∮ R.R. Palestine, Tex.



SECTION 49. COMMODITY LEVEL

Analysis 49.19 Comparison of Carrier Rates for Transportation of Gasoline

| ORIGIN | DESTINATION | RAIL MILES | RATES IN CENTS PER HUNDRED POUNDS: RAILWAY 1932 | RAILWAY 1934 | PIPE LINE 1932 | PIPE LINE 1934 | RATIO OF PIPE LINE RATES TO RAIL RATES: 1932 | 1934 |
|---|---|---|---|---|---|---|---|---|
| AVERAGE MOVEMENT | | 369 | 28 | 28 | 22 | 20 | 79% | 72% |
| Eldorado, Kan. | Kansas City, Kan. | 171 | 20 | 19 | 19 | 19 | 99 | 100 |
| West Tulsa, Okla. | Kansas City, Kan. | 445 | 27 | 26 | 27 | 25 | 100 | 100 |
| Eldorado, Kan. | Chicago, Ill. | 606 | 37 | 34 | 37 | 36 | 99 | 106 |
| West Tulsa, Okla. | Chicago, Ill. | 681 | 37 | 36 | 37 | 36 | 99 | 100 |
| Eldorado, Kan. | Minneapolis, Minn. | 614 | 41 | 40 | 41 | 40 | 99 | 100 |
| West Tulsa, Okla. | Minneapolis, Minn. | 714 | 43 | 42 | 43 | 42 | 99 | 100 |
| Eldorado, Kan. | Omaha, Neb. | 365 | 31 | 30 | 30 | 30 | 99 | 100 |
| West Tulsa, Okla. | Omaha, Neb. | 427 | 34 | 33 | 34 | 33 | 99 | 100 |
| Eldorado, Kan. | East St. Louis, Ill. | 427 | 31 | 30 | 31 | 30 | 100 | 99 |
| West Tulsa, Okla. | East St. Louis, Ill. | 429 | 31 | 30 | 31 | 30 | 100 | 99 |
| Eldorado, Kan. | Des Moines, Iowa | 353 | 31 | 30 | 30 | 30 | 99 | 100 |
| West Tulsa, Okla. | Des Moines, Iowa | 453 | 34 | 33 | 34 | 33 | 99 | 100 |
| Borger, Texas | East St. Louis, Ill. | 805 | 34 | 33 | 33 | 33 | 97 | 100 |
| Borger, Texas | Kansas City, Kan. | 548 | 31 | 30 | 30 | 30 | 97 | 100 |
| Borger, Texas | Coralville, Iowa | 838 | 39 | 38 | 39 | 39 | 99 | 103 |
| Kansas City, Kan. | East St. Louis, Ill. | 276 | 23 | 22 | 23 | 23 | 100 | 105 |
| Borger, Texas | Chicago, Ill. | 984 | 40 | 39 | 40 | 38 | 100 | 99 |
| Borger, Texas | Minneapolis, Minn. | 993 | 46 | 45 | 45 | 45 | 99 | 100 |
| Borger, Texas | Omaha, Neb. | 663 | 37 | 36 | 36 | 36 | 99 | 100 |
| Borger, Texas | Des Moines, Iowa | 731 | 37 | 36 | 36 | 36 | 99 | 100 |
| Twin Oaks, Penna.* | Malvern, Penna. | 29 | 13 | 12 | 12 | 5 | 94 | 42 |
| Twin Oaks, Penna.* | Reading, Penna. | 70 | 13 | 12 | 13 | 6 | 99 | 48 |
| Twin Oaks, Penna.* | Lancaster, Penna. | 66 | 14 | 13 | 13 | 6 | 96 | 51 |
| Twin Oaks, Penna.* | Allentown, Penna. | 81 | 15 | 14 | 13 | 6 | 92 | 43 |
| Twin Oaks, Penna.* | York, Penna. | 97 | 17 | 16 | 13 | 6 | 80 | 41 |
| Twin Oaks, Penna.* | Harrisburg, Penna. | 102 | 17 | 16 | 13 | 6 | 78 | 41 |
| Twin Oaks, Penna.* | Tamaqua, Penna. | 110 | 20 | 19 | 13 | 6 | 66 | 34 |
| Twin Oaks, Penna.* | Hazelton, Penna. | 129 | 21 | 20 | 14 | 8 | 65 | 39 |
| Twin Oaks, Penna.* | Exeter, Penna. | 166 | 23 | 22 | 14 | 8 | 61 | 36 |
| Twin Oaks, Penna.* | Johnstown, Penna. | 272 | 28 | 27 | 15 | 11 | 54 | 40 |
| Twin Oaks, Penna.* | Binghamton, N. Y. | 226 | 26 | 25 | 15 | 9 | 56 | 37 |
| Twin Oaks, Penna.* | Cortland, N. Y. | 270 | 28 | 27 | 16 | 11 | 55 | 40 |
| Twin Oaks, Penna.* | Syracuse, N. Y. | 306 | 30 | 29 | 16 | 13 | 54 | 43 |
| Twin Oaks, Penna.* | Kittanning, Pa. (Blawnor) | 350 | 32 | 31 | 16 | 13 | 51 | 41 |
| Twin Oaks, Penna.* | Vanport, Pa. (Beaver) | 385 | 32 | 31 | 17 | 14 | 55 | 44 |
| Twin Oaks, Penna.* | Youngstown, Ohio | 414 | 33 | 32 | 17 | 14 | 51 | 42 |
| Twin Oaks, Penna.* | Akron, Ohio | 465 | 36 | 35 | 18 | 15 | 49 | 43 |
| Twin Oaks, Penna.* | Cleveland, Ohio | 480 | 36 | 35 | 18 | 17 | 50 | 47 |
| Bayway, N. J. | Barto, Penna. | 119 | 22 | 21 | 6 | 6 | 30 | 30 |
| Bayway, N. J. | Centerbridge, Penna.# | 96 | 21 | 20 | 5 | 5 | 26 | 27 |
| Bayway, N. J. | Cisna Run, Penna. | 207 | 22 | 41 | 9 | 9 | 41 | 22 |
| Bayway, N. J. | East Freedom, Penna. | 316 | 31 | 30 | 11 | 11 | 34 | 35 |
| Bayway, N. J. | Hamilton, N. J. | 29 | 13 | 11 | 5 | 5 | 38 | 45 |
| Bayway, N. J. | Midland, Penna. | 415 | 35 | 34 | 14 | 14 | 41 | 42 |
| Bayway, N. J. | Reed, Penna. | 169 | 25 | 24 | 12 | 12 | 48 | 49 |

* Marcus Hook, Penna.
# R.R. New Hope

SECTION 49. COMMODITY LEVEL

Analysis 49.20 Pipe Line Patronage (Trunk Line Only) - 1931

| | ALL COMPANIES | NORTH ATLANTIC COAST | GREAT LAKES SOUTHWEST | SOUTHWEST GULF |
|---|---|---|---|---|
| PROPRIETARY PATRONS ONLY | | | | |
| Number of Companies | 12 | 4 | 5 | 3 |
| Tonnage Handled (Thousands) | 9,274 | 1,634 | 6,357 | 1,283 |
| Percentages - Total Tonnage - All Companies | 8% | 20% | 15% | 2% |
| MIXED PATRONAGE# | | | | |
| Number of Companies | 20 | 2 | 6 | 12 |
| Tonnage Handled (Thousands) | 82,211 | 1,611 | 21,873 | 58,727 |
| Tonnage of Proprietors (Thousands) | 63,982 | 1,012 | 14,233 | 48,737 |
| Tonnage of Others (Thousands) | 18,229 | 599 | 7,643 | 9,987 |
| Percentages - Total Tonnage - All Companies | 75% | 20% | 53% | 96% |
| NO TRAFFIC HANDLED FOR PROPRIETORS | | | | |
| Number of Companies | 9 | 5 | 4 | - |
| Tonnage Handled (Thousands) | 17,976 | 4,936 | 13,040 | - |
| Percentages - Total Tonnage - All Companies | 16% | 60% | 32% | - |
| ALL COMPANIES# | | | | |
| Total Companies | 41 | 11 | 15 | 15 |
| Total Tonnage Handled (Thousands) | 109,461 | 8,181 | 41,270 | 60,010 |
| Proprietors' Tonnage (Thousands) | 73,256 | 2,646 | 20,590 | 50,020 |
| Percentages - Proprietors' Tonnage | 67% | 32% | 50% | 83% |

# Excludes four companies for which segregation of traffic between proprietory and others not available.



SECTION 50. EFFECT OF PRICE LEVEL

Analysis 50.1 Result of Highway Lower Charges

| BUSINESS GROUPS | TONS REPORTED BY SHIPPERS: ALL SHIPPERS # TOTAL TONNAGE (000) | ALL SHIPPERS # HIGHWAY TONNAGE (000) | ALL SHIPPERS # PER CENT | SHIPPERS USING HIGHWAY ON ACCOUNT OF LOWER CHARGES/ TOTAL TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT OF LOWER CHARGES/ HIGHWAY TONNAGE (000) | SHIPPERS USING HIGHWAY ON ACCOUNT OF LOWER CHARGES/ PER CENT |
|---|---|---|---|---|---|---|
| ALL GROUPS | 290,203 | 16,275 | 6% | 70,671 | 9,751 | 14% |
| I ROUGH MATERIAL* | 12,350 | 1,683 | 14% | 3,204 | 974 | 30% |
| 34 Sand, Stone, Gravel | 12,060 | 1,670 | 14 | 3,203 | 972 | 30 |
| 8b Timber | 290 | 14 | 5 | 4 | 2 | 48 |
| II RAW MATERIAL* | 67,284 | 1,959 | 3% | 5,021 | 388 | 8% |
| 10a Grain | 3,068 | 3 | ‡ | - | - | - |
| 16 Fresh Fruits and Vegetables | 2,436 | 482 | 20 | 567 | 125 | 22 |
| 22 Livestock and Poultry | 832 | 476 | 57 | 40 | 23 | 58 |
| 12 Coal, Coke and Fuel | 45,165 | 539 | 1 | 1,203 | 65 | 5 |
| 26 Ores and Concentrates | 8,163 | 48 | 1 | 1,955 | 25 | 1 |
| 8a Lumber | 6,833 | 318 | 5 | 1,135 | 111 | 10 |
| 03 Barrels, Cooperage Material | 487 | 93 | 19 | 120 | 38 | 32 |
| III SEMIPROCESSED MATERIAL* | 12,748 | 1,314 | 10% | 7,236 | 1,131 | 16% |
| 13 Cotton, Cotton Linters | 1,259 | 185 | 15 | 550 | 126 | 23 |
| 29 Paper, Paper Products | 11,439 | 1,123 | 10 | 6,666 | 1,001 | 15 |
| 35 Horticultural Material | 50 | 5 | 10 | 20 | 4 | 18 |
| IV NECESSARIES* | 50,748 | 3,869 | 8% | 17,649 | 2,333 | 13% |
| 04 Beverages and Liquors | 1,063 | 339 | 32 | 519 | 247 | 48 |
| 36 Sugar, Syrups and Molasses | 9,679 | 648 | 7 | 427 | 55 | 13 |
| 39 Vegetable Oil, Meal and Cake | 1,360 | 213 | 16 | 334 | 58 | 17 |
| 27 Packing House Products | 7,534 | 494 | 7 | 7,026 | 467 | 7 |
| 02 Bakery Goods, Confectionery | 1,486 | 258 | 17 | 1,280 | 247 | 19 |
| 09 Canned Goods | 2,342 | 299 | 13 | 826 | 178 | 22 |
| 18 Groceries | 2.362 | 544 | 23 | 931 | 356 | 38 |
| 10b Cereals, Flour, Mill Products | 18,401 | 406 | 2 | 4,417 | 353 | 8 |
| 17 Furniture and Furnishings | 606 | 66 | 11 | 69 | 37 | 54 |
| 31 Porcelain, China, Etc. | 152 | 6 | 4 | 47 | 2 | 4 |
| 21 Leather and Leather Goods | 927 | 77 | 8 | 282 | 58 | 20 |
| 37 Textiles | 4,166 | 433 | 10 | 1,271 | 188 | 15 |
| 07 Boots and Shoes | 506 | 50 | 10 | 97 | 43 | 44 |
| 15 Dry Goods, Clothing | 163 | 37 | 23 | 34 | 12 | 36 |
| V AUXILIARIES* | 98,280 | 4,192 | 4% | 22,471 | 3,088 | 14% |
| 8a Masonry Materials, (except wood) | 17,756 | 830 | 5 | 2,691 | 780 | 29 |
| 30 Petroleum, Crude and Refined | 37,422 | 1,249 | 3 | 12,285 | 989 | 8 |
| 28 Paints, Varnishes and Gums | 197 | 36 | 18 | 85 | 15 | 17 |
| 11 Chemicals | 6,807 | 322 | 5 | 1,708 | 154 | 9 |
| 40 Miscellaneous Commodities | 36,098 | 1,755 | 5 | 5,701 | 1,152 | 20 |
| VI ACCESSORIES* | 48,793 | 3,258 | 7% | 15,090 | 1,837 | 12% |
| 19 Iron and Steel, Structural | 11,363 | 226 | 2 | 658 | 73 | 11 |
| 20 Iron and Steel Articles | 19,935 | 998 | 5 | 6,611 | 618 | 9 |
| 24 Metals, Non-ferrous | 1,921 | 216 | 11 | 997 | 129 | 13 |
| 33 Rubber, Rubber Articles, Tires | 1,584 | 213 | 13 | 781 | 85 | 11 |
| 23 Machinery, Vehicles, etc. | 4,974 | 205 | 4 | 803 | 97 | 12 |
| 32 Plumbing and Heating Supplies | 529 | 21 | 4 | 263 | 17 | 6 |
| 01 Automotive Vehicles and Parts | 6,331 | 1,253 | 20 | 4,378 | 734 | 17 |
| 05 Boats, Marine Equipment | 154 | 1 | 1 | / | / | 10 |
| 06 Books and Periodicals | 821 | 55 | 7 | 338 | 46 | 14 |
| 14 Department Store Merchandise | 466 | 37 | 8 | 207 | 32 | 15 |
| 38 Tobacco, Tobacco Products | 710 | 32 | 5 | 51 | 6 | 12 |
| 25 Musical Instruments and Supplies | 5 | / | 3 | 3 | / | 5 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.
# As reported by respondents to Shippers' Inquiry.
/ As reported by respondents to Shippers' Inquiry.
/ Less than 500 tons.
‡ Less than ½%.

SECTION 53. CARRIER STRUCTURES

Analysis 53.1 Railway District Revenue and Traffic Statistics - 1932

| | EASTERN DISTRICT | POCAHONTAS | SOUTHERN DISTRICT* | WESTERN DISTRICT |
|---|---|---|---|---|
| **REVENUE PER CAR MILE** | | | | |
| All Traffic | $ .3123 | $ .3006 | $ .2915 | $ .2671 |
| Local Traffic | .4319 | .3582 | .4160 | .3728 |
| Interline Traffic | .3105 | .2932 | .2904 | .2638 |
| Intermediate Traffic | .1989 | .1997 | .1911 | .1610 |
| **REVENUE PER TON MILE** | | | | |
| All Traffic | $ .010629 | $ .006139 | $ .010568 | $ .011269 |
| Local Traffic | .013438 | .006247 | .013213 | .013786 |
| Interline Traffic | .010791 | .005987 | .010315 | .011089 |
| Intermediate Traffic | .007038 | .006751 | .008307 | .008089 |
| **AVERAGE HAUL (MILES)** | | | | |
| All Traffic | 162.32 | 283.86 | 197.28 | 242.30 |
| Local Traffic | 160.19 | 329.19 | 154.28 | 176.37 |
| Interline Traffic | 158.13 | 286.76 | 205.09 | 260.67 |
| Intermediate Traffic | 177.73 | 234.12 | 248.19 | 372.22 |
| **AVERAGE LOAD (TONS)** | | | | |
| All Traffic | 29.38 | 48.97 | 27.58 | 23.71 |
| Local Traffic | 32.14 | 57.33 | 31.48 | 27.04 |
| Interline Traffic | 28.77 | 48.97 | 28.16 | 23.79 |
| Intermediate Traffic | 28.26 | 29.58 | 23.00 | 19.90 |

* Excluding Pocahontas.



SECTION 67. STATISTICS USED

Analysis 67.1 Rail Operative Service Units - 1932

| UNITS | DISTRICTS | | | | | | TERRITORIES | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | UNITED STATES (000)* | EASTERN (000)* | SOUTH-ERN (000)* | WESTERN (000)* | NEW ENGLAND (000)* | TRUNK LINE (000)* | CENTRAL (000)* | POCA-HONTAS (000)* | SOUTH-EASTERN (000)* | TRUNK LINE (000)* | SOUTH-WESTERN (000)* | PACIFIC NORTH-WEST (000)* | PACIFIC SOUTH-WEST (000)* |
| Revenue * | $ 2,599 | $ 1,122 | $ 487 | $ 950 | $ 8 | $ 22 | $ 36 | $ - | $ 8 | $ 35 | $ 59 | $ 20 | $ 18 |
| Route Miles | 243 | 68 | 43 | 133 | - | - | - | - | - | - | - | - | - |
| Schedules | 5,333 | 2,572 | 929 | 1,832 | 248 | 1,263 | 1,061 | 295 | 634 | 922 | 467 | 201 | 243 |
| Schedule Hours | 24,407 | 10,267 | 4,400 | 9,740 | 852 | 4,234 | 5,180 | 1,303 | 3,098 | 4,655 | 2,377 | 1,204 | 1,524 |
| Schedule Miles | 391,053 | 157,570 | 70,744 | 162,739 | 12,376 | 99,028 | 86,166 | 17,025 | 55,721 | 77,458 | 41,247 | 19,274 | 24,699 |
| Vehicles # | 27,147 | 14,562 | 4,627 | 8,663 | 1,613 | 6,103 | 6,846 | 1,600 | 2,947 | 4,784 | 2,101 | 726 | 1,092 |
| Carload | 18,067 | 10,356 | 3,211 | 6,182 | 903 | 4,455 | 4,998 | 1,148 | 1,866 | 3,282 | 1,522 | 529 | 800 |
| L.C.L. | 9,079 | 4,206 | 1,413 | 2,181 | 710 | 1,648 | 1,849 | 452 | 1,081 | 1,502 | 579 | 196 | 291 |
| Vehicle Miles - Loaded * | 10,333 | 4,666 | 1,709 | 3,958 | 258 | 1,440 | 2,149 | 558 | 1,151 | 1,808 | 903 | 530 | 698 |
| Net Tons # | 646,983 | 265,114 | 132,147 | 249,722 | 25,918 | 164,349 | 173,115 | 69,294 | 63,033 | 92,799 | 43,100 | 16,660 | 17,658 |
| Carload | 615,234 | 259,908 | 128,212 | 227,114 | 24,555 | 161,062 | 169,682 | 68,700 | 60,512 | 89,976 | 42,238 | 16,160 | 17,395 |
| L.C.L. | 31,749 | 5,206 | 3,935 | 22,608 | 1,363 | 3,287 | 3,433 | 594 | 2,521 | 2,823 | 862 | 500 | 953 |
| Net Ton Miles * | 235,638 | 113,128 | 47,319 | 74,892 | 6,034 | 48,246 | 59,118 | 21,300 | 26,018 | 35,080 | 17,746 | 10,328 | 11,737 |
| Equated Ton Miles * | 455,788 | 219,400 | 91,527 | 144,861 | 11,672 | 93,321 | 114,407 | 41,201 | 50,327 | 67,854 | 34,326 | 19,978 | 22,703 |
| Gross Ton Miles, including Locomotives* | 766,772 | 343,023 | 131,740 | 272,009 | 21,399 | 137,896 | 181,828 | 49,990 | 81,790 | 129,502 | 64,167 | 37,313 | 45,027 |
| Car Ton Miles * | 648,392 | 299,912 | 111,937 | 233,543 | 18,250 | 122,280 | 159,382 | 44,555 | 70,383 | 108,130 | 55,307 | 31,765 | 38,343 |
| Terminal Cars | 54,753 | 28,409 | 9,938 | 16,407 | 2,907 | 12,505 | 12,996 | 3,434 | 6,504 | 8,296 | 4,391 | 1,573 | 2,117 |
| Terminal Hours | 49,036 | 25,518 | 9,244 | 14,273 | 2,803 | 12,023 | 10,692 | 3,313 | 5,932 | 6,873 | 3,942 | 1,466 | 1,992 |
| Single Carrier | 31,844 | 16,918 | 6,012 | 8,913 | 1,546 | 8,221 | 7,048 | 2,578 | 3,435 | 3,967 | 2,518 | 1,066 | 1,465 |
| Carload | 17,192 | 8,600 | 3,252 | 5,340 | 1,157 | 3,799 | 3,644 | 795 | 2,497 | 2,572 | 1,421 | 501 | 750 |
| L.C.L. | 5,718 | 2,890 | 694 | 2,134 | 104 | 1,822 | 2,084 | 114 | 524 | 1,375 | 142 | 102 | 152 |
| Multiple Carrier | 5,336 | 2,610 | 655 | 2,072 | 95 | 451 | 220 | 8 | 31 | 48 | 8 | 4 | 2 |
| Carload | 3,781 | 1,881 | 498 | 1,402 | 61 | 221 | 91 | - | 11 | 18 | - | - | - |
| L.C.L. | 37,181 | 19,581 | 6,667 | 10,986 | 1,741 | 8,655 | 9,133 | 2,692 | 3,975 | 5,242 | 2,999 | 1,168 | 1,615 |
| Total Carload | 17,573 | 8,881 | 3,271 | 5,421 | 1,167 | 3,863 | 3,653 | 742 | 2,589 | 3,054 | 1,431 | 505 | 531 |
| Total L.C.L. | 36,112 | 20,071 | 5,174 | 10,894 | 1,137 | 8,865 | 10,072 | 1,412 | 3,762 | 6,025 | 2,270 | 1,146 | 1,453 |
| Switch Engine Hours | 29,376 | 16,119 | 4,167 | 8,792 | 922 | 7,004 | 8,192 | 1,036 | 3,131 | 5,034 | 1,709 | 879 | 1,170 |
| Yard | 6,764 | 3,655 | 1,007 | 2,102 | 214 | 1,861 | 1,580 | 375 | 631 | 991 | 561 | 267 | 283 |
| Train Switching | $ 1,946 | $ 976 | $ 308 | $ 682 | $ 79 | $ 431 | $ 465 | $ 93 | $ 211 | $ 334 | $ 153 | $ 83 | $ 112 |
| All Expense and Taxes * | 898 | 398 | 154 | 346 | 37 | 172 | 188 | 48 | 106 | 154 | 82 | 49 | 62 |
| Road Proportion * | 1,068 | 579 | 153 | 336 | 43 | 259 | 277 | 46 | 108 | 180 | 72 | 34 | 55 |
| Yard Proportion * | 1,237 | 592 | 203 | 443 | 48 | 266 | 279 | 65 | 140 | 204 | 105 | 63 | 77 |
| Total Line Expense * | 729 | 384 | 105 | 240 | 31 | 166 | 187 | 30 | 75 | 130 | 50 | 25 | 35 |
| Total Terminal Expense * | | | | | | | | | | | | | |

* All figures in thousands, except those in lines marked * which are in millions.
# For the United States, Cars and Net Tons originated; for all other Districts, Cars and Net Tons equated to represent one handling per Rate Territory.

SECTION 67. STATISTICS USED

Analysis 67.2 Rail Freight Expense and Taxes* - 1932 - Aggregate

| PURPOSE AND DISTRICTS AND TERRITORIES | ALL EXPENSE AND TAXES# | OVERHEAD# TOTAL OVERHEAD | OVERHEAD# ADMINISTRATION | OVERHEAD# TAXES | DIRECT EXPENSES TOTAL DIRECT | MAINTENANCE WAY AND STRUCTURES TOTAL | ROADWAY | POWER STRUCTURE | STATION | WHARVES DOCKS | MAINTENANCE EQUIPMENT TOTAL | LOCOMOTIVE | FREIGHT CAR HOME | FREIGHT CAR FOREIGN | TRANSPORTATION TOTAL | TRANSPORTATION MOVEMENT | TRANSPORTATION SUPPLIES | TRANSPORTATION STATION | TRANSPORTATION FLOATAGE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Road and Yard | | | | | | | | | | | | | | | | | | | |
| United States | $1,966 | $ 371 | $ 178 | $ 193 | $1,595 | $ 254 | $ 228 | $ 12.2 | $ 9.3 | $ 4.4 | $ 531 | $ 192 | $ 252 | $86.7 | $ 809 | $ 610 | $31.8 | $ 155 | $12.0 |
| Eastern | 976 | 184 | 88 | 96 | 793 | 110 | 98 | 5.7 | 4.4 | 2.2 | 268 | 97 | 123 | 47.7 | 415 | 308 | 17.2 | 79 | 10.9 |
| Southern | 308 | 60 | 29 | 31 | 248 | 47 | 42 | 2.0 | 1.5 | .8 | 79 | 32 | 43 | 4.1 | 122 | 94 | 4.2 | 23 | .6 |
| Western | 682 | 128 | 61 | 67 | 554 | 97 | 88 | 4.5 | 3.4 | 1.5 | 184 | 63 | 86 | 35.0 | 272 | 209 | 10.4 | 53 | .5 |
| New England | 79 | 15 | 7 | 8 | 65 | 12 | 11 | .5 | .5 | .1 | 19 | 7 | 7 | 4.4 | 34 | 25 | 1.0 | 8 | * |
| Trunk Line | 431 | 82 | 39 | 43 | 350 | 43 | 37 | 2.3 | 2.1 | 1.4 | 116 | 47 | 52 | 17.9 | 190 | 138 | 7.3 | 35 | 9.5 |
| Central | 465 | 87 | 42 | 45 | 378 | 55 | 50 | 2.9 | 1.8 | .6 | 133 | 44 | 64 | 25.4 | 190 | 145 | 9.0 | 35 | 1.4 |
| Pocahontas | 93 | 19 | 9 | 10 | 75 | 14 | 12 | .9 | .3 | .5 | 25 | 11 | 14 | Cr .3 | 36 | 28 | 1.6 | 6 | .5 |
| Southeastern | 214 | 41 | 20 | 22 | 173 | 32 | 30 | 1.2 | 1.2 | .3 | 54 | 21 | 29 | 4.4 | 86 | 65 | 2.6 | 18 | .1 |
| Western Trunk Line | 334 | 63 | 30 | 33 | 271 | 46 | 41 | 2.4 | 1.7 | 1.3 | 91 | 29 | 46 | 16.0 | 134 | 101 | 5.7 | 27 | * |
| Southwestern | 153 | 28 | 14 | 15 | 125 | 24 | 22 | .9 | .7 | .1 | 42 | 14 | 18 | 9.8 | 60 | 45 | 1.5 | 13 | .1 |
| Pacific Northwest | 83 | 16 | 8 | 8 | 68 | 13 | 13 | .6 | .3 | * | 21 | 9 | 9 | 3.9 | 33 | 26 | 1.4 | 5 | .1 |
| Pacific Southwest | 112 | 21 | 10 | 11 | 91 | 14 | 13 | .6 | .7 | .1 | 30 | 11 | 13 | 5.7 | 46 | 36 | 1.8 | 8 | .3 |
| Road | | | | | | | | | | | | | | | | | | | |
| United States | $ 898 | $ 176 | $ 84 | $ 91 | $ 722 | $ 197 | $ 188 | $ 7.9 | $ 1.4 | $ - | $ 167 | $ 138 | $ 20 | $ 8.8 | $ 359 | $ 340 | $ 2.8 | $ 16 | $ - |
| Eastern | 398 | 78 | 37. | 40 | 320 | 81 | 77 | 3.4 | .6 | - - | 75 | 63 | 9 | 3.9 | 162 | 153 | 1.3 | 8 | - - |
| Southern | 154 | 30 | 15 | 16 | 124 | 38 | 36 | 1.4 | .2 | - - | 29 | 25 | 3 | .7 | 57 | 55 | .5 | 2 | - - |
| Western | 346 | 68 | 32 | 35 | 279 | 78 | 74 | 3.2 | .5 | - - | 62 | 50 | 7 | 4.2 | 139 | 132 | 1.1 | 6 | - - |
| New England | 37 | 7 | 3 | 4 | 30 | 9 | 8 | .3 | .1 | - - | 6 | 5 | 1 | .3 | 15 | 11 | .1 | 1 | - - |
| Trunk Line | 172 | 34 | 16 | 18 | 139 | 32 | 30 | 1.4 | .3 | - - | 34 | 30 | 3 | 1.2 | 73 | 69 | .4 | 3 | - - |
| Central | 188 | 37 | 18 | 19 | 151 | 41 | 39 | 1.7 | .2 | - - | 36 | 29 | 5 | 2.3 | 74 | 70 | .7 | 3 | - - |
| Pocahontas | 48 | 9 | 5 | 5 | 38 | 12 | 11 | .6 | * | - - | 10 | 8 | 1 | .1 | 17 | 16 | .1 | 1 | - - |
| Southeastern | 106 | 21 | 10 | 11 | 86 | 26 | 25 | .7 | .2 | - - | 19 | 16 | 2 | .6 | 40 | 38 | .3 | 2 | - - |
| Western Trunk Line | 154 | 30 | 14 | 16 | 124 | 35 | 33 | 1.6 | .3 | - - | 27 | 22 | 3 | 1.9 | 62 | 59 | .5 | 3 | - - |
| Southwestern | 82 | 16 | 8 | 8 | 66 | 20 | 19 | .7 | .1 | - - | 14 | 11 | 2 | 1.0 | 32 | 29 | .1 | 2 | - - |
| Pacific Northwest | 49 | 10 | 5 | 5 | 39 | 11 | 11 | .5 | * | - - | 9 | 7 | 1 | .6 | 19 | 19 | .2 | 1 | - - |
| Pacific Southwest | 62 | 12 | 6 | 6 | 50 | 12 | 11 | .5 | .1 | - - | 12 | 9 | 2 | .7 | 26 | 25 | .3 | 1 | - - |
| Yard | | | | | | | | | | | | | | | | | | | |
| United States | $1,068 | $ 196 | $ 94 | $ 102 | $ 872 | $ 57 | $ 40 | $ 4.2 | $ 8.0 | $ 4.4 | $ 364 | $ 54 | $ 232 | $77.9 | $ 451 | $ 271 | $29.0 | $ 139 | $12.0 |
| Eastern | 579 | 106 | 51 | 55 | 473 | 29 | 20 | 2.3 | 3.8 | 2.2 | 191 | 34 | 114 | 43.8 | 253 | 155 | 16.0 | 71 | 10.9 |
| Southern | 153 | 30 | 14 | 15 | 124 | 9 | 6 | .7 | 1.3 | .8 | 50 | 7 | 40 | 3.3 | 64 | 39 | 3.8 | 21 | .6 |
| Western | 336 | 60 | 29 | 31 | 275 | 19 | 14 | 1.3 | 2.9 | 1.5 | 123 | 13 | 79 | 30.8 | 133 | 77 | 9.3 | 47 | .5 |
| New England | 43 | 8 | 4 | 4 | 35 | 3 | 2 | .1 | .4 | .1 | 13 | 2 | 7 | 4.1 | 19 | 11 | .9 | 7 | * |
| Trunk Line | 259 | 48 | 23 | 25 | 211 | 11 | 7 | .9 | 1.8 | 1.4 | 82 | 17 | 49 | 16.6 | 118 | 69 | 6.9 | 32 | 9.5 |
| Central | 277 | 50 | 24 | 26 | 227 | 14 | 11 | 1.2 | 1.6 | .6 | 96 | 15 | 59 | 23.1 | 116 | 75 | 8.2 | 32 | 1.4 |
| Pocahontas | 46 | 9 | 4 | 5 | 37 | 3 | 2 | .3 | .3 | .5 | 15 | 2 | 13 | Cr .4 | 19 | 12 | 1.4 | 5 | .5 |
| Southeastern | 108 | 21 | 10 | 11 | 87 | 6 | 5 | .4 | 1.0 | .3 | 35 | 5 | 27 | 3.7 | 46 | 27 | 2.3 | 16 | .1 |
| Western Trunk Line | 180 | 33 | 16 | 17 | 147 | 11 | 8 | .8 | 1.4 | 1.3 | 64 | 8 | 43 | 14.1 | 71 | 42 | 5.2 | 24 | * |
| Southwestern | 72 | 12 | 6 | 6 | 59 | 4 | 3 | .2 | .6 | .1 | 27 | 3 | 16 | 8.7 | 28 | 15 | 1.4 | 11 | .1 |
| Pacific Northwest | 34 | 6 | 3 | 3 | 28 | 2 | 2 | .1 | .2 | * | 13 | 1 | 8 | 3.0 | 13 | 7 | 1.2 | 5 | .1 |
| Pacific Southwest | 50 | 9 | 4 | 5 | 41 | 2 | 1 | .1 | .6 | .1 | 19 | 2 | 12 | 5.0 | 20 | 11 | 1.4 | 7 | .3 |

* All figures in millions of dollars. # Does not include $18,000,000 loss and damage claims.



SECTION 68. UNIT CODES

Analysis 68.1 Grouping of Primary Cost Accounts

| COST GROUP | INTERSTATE COMMERCE COMMISSION PRIMARY ACCOUNTS | |
|---|---|---|
| FUNCTION DISTRIBUTION | RAILWAY | WATERWAY PIPE LINES |
| MAINTENANCE | | |
| Roadway | 202-226, inc.; 229,230. | |
| | 249-272, inc.# | 202-204, inc.; 210-212, inc.; 252-254, inc.; 260-262, inc.# |
| Power Structures | 231-236, inc.# | 205#, 255# |
| Locomotives | 308-313, inc., 323-325, inc.# | |
| Cars | | |
| Owned | 314-316, inc.# | WE 1-11, inc. |
| Hired | 505, 536 | WE 56-58, inc.. WE 11-12 inc. |
| Station, Wharves & Docks | 227, 228# 241-244, inc.# | WE 15, 16# WE 13, 14# 206, 207, 256, 257# |
| TRANSPORTATION | | |
| Train | | |
| Movement | 372, 392-401, inc., 404-406# | WE 24-26, inc., 32-33# WE 27-31, inc.# 272, 273, 277# |
| Supplies | 402# | |
| Assemblage | 372, 375, 377-389, inc., 392-401, inc., 404-406, inc.# | WE 39, 40, 41, 43# 222, 223, 227# |
| Movement | 402# | |
| Supplies | 406# | WE 42# |
| Floatage | | |
| Station Agency | 373, 374, 376# | WE 35-38, inc.# 224, 225, 274, 275# |
| OTHER OPERATIONS | | |
| Water Line Operations | 431-433, inc. | |
| Miscellaneous and Unassigned | 237-240, inc., 245, 246, 280, 317-322, inc., 338, 439, 442, 443-446, inc. | |
| OVERHEAD | | |
| Administration | | |
| Traffic | 351-359, inc. | WE 17-23, inc. |
| General | 451-462, inc. | (WE 42-51, inc. (WE 57-59, inc. |
| Taxes | 532, 535 | WE 16 (265-269, inc. 412 |

NOTE: The accounts listed are the direct accounts, in addition to which the following supervisory accounts were apportioned among the direct cost groups in proportion to the charges in the direct accounts:

| | | |
|---|---|---|
| # Maintenance of Way Equipment | 201, 215-279, inc.. 306-308, inc. 309-317, inc. | WE 1# 201, 213, 214, 251, 263, 264 |
| # Transportation, including freight service proportion of unassigned expenses | 347, 348, 371, 390, 391, 407, 410-417, inc., 420 | WE 34 WE 44-47 inc. and 52 206, 221, 226, 228, 256, 271, 276, 278 |

SECTION 70. EXTENT

Analysis 70.1 Extent of Carrier Operations - 1932

| | RAIL | WATER CARLOT COMMON | WATER CARGO CONTRACT | WATER CARGO PRIVATE | PIPE |
|---|---|---|---|---|---|
| AGGREGATE STATISTICS | | | | | |
| Reporting Carriers | 160 | 103 | 33 | 29 | 46 |
| Route Miles (Thousands) | 243 | - | - | - | 93 |
| Main | 167 | 171 | 57 | 37 | 51 |
| Branch | 76 | - | - | - | 41 |
| Schedules* (Thousands) | 5,333 | 109 | 2 | 2 | - |
| Schedule Miles (Thousands) | 391,053 | 20,684 | 2,670 | 1,796 | - |
| Schedule Hours (Thousands) | 24,407 | 2,811 | 397 | 323 | - |
| Vehicles Originated (Thousands) | 27,147 | - | - | - | - |
| Tons Originated (Thousands) | 646,223 | 18,769 | 20,240 | 8,209 | 82,828/ |
| Locomotive Miles (Millions) | 398 | - | - | - | - |
| Vehicle Miles - Total (Millions) | 17,066 | - | - | - | - |
| Loaded | 10,333 | - | - | - | - |
| Empty | 6,733 | - | - | - | - |
| Ton Miles (Billions) | | | | | |
| Gross# | 747 | - | - | - | - |
| Vehicle | 648 | - | - | - | - |
| Net Ton Miles | | | | | |
| Railroad distance | 236 | 18 | 15 | 4 | - |
| Water distance | - | 33 | 16 | 4 | 32/ |
| Equated | 456 | - | - | - | - |
| Capacity§ | - | 74 | 24 | 17 | - |
| AVERAGE STATISTICS | | | | | |
| Density per | | | | | |
| Route Mile | | | | | |
| Schedules | .22 | .64 | .02 | .057 | - |
| Schedule Miles | 1,610 | 121 | 47 | 486 | - |
| Locomotive Miles | 1,637 | - | - | - | - |
| Vehicle Miles - Loaded | 42,554 | - | - | - | - |
| Gross Ton Miles - Total (Thousands) | 3,075 | - | - | - | - |
| Vehicle Ton Miles (Thousands) | 2,670 | - | - | - | - |
| Net Ton Miles (Thousands) | | | | | |
| Railroad distance | 970 | 106 | 261 | 1,094 | - |
| Water distance | - | 192 | 277 | 1,171 | 345 |
| Equated Ton Miles (Thousands) | 1,877 | - | - | - | - |
| Density Per | | | | | |
| Schedule Mile | | | | | |
| Locomotive Miles | 1.2 | - | - | - | - |
| Vehicle Miles - Loaded | 26.42 | - | - | - | - |
| Gross Ton Miles - Total | 1,910 | - | - | - | - |
| Vehicle | 1,660 | - | - | - | - |
| Net Ton Miles | | | | | |
| Railroad distance | 600 | 881 | 5,371 | 2,321 | - |
| Water distance | | 1,594 | 5,680 | 2,142 | - |
| Equated Ton Miles | 1,170 | - | - | - | - |
| Density Per | | | | | |
| Vehicle Mile | | | | | |
| Gross Ton Miles | 72.27 | - | - | - | - |
| Vehicle Ton Miles | 62.75 | - | - | - | - |
| Net Ton Miles | | | | | |
| Railroad distance | 22.80 | - | - | - | - |
| Water distance | | - | - | - | - |
| Equated Ton Miles | 44.11 | - | - | - | - |
| Density Per | | | | | |
| Schedule Hour | | | | | |
| Gross Ton Miles | 30,600 | - | - | - | - |
| Vehicle Ton Miles | 26,570 | - | - | - | - |
| Net Ton Miles | | | | | |
| Railroad distance | 9,650 | 6,457 | 32,411 | 12,875 | - |
| Water distance | | 11,706 | 39,572 | 13,486 | - |
| Equated Ton Miles | 18,670 | - | - | - | - |

* Train, vessel trips and pipe line runs. # Including locomotive.
§ Vessel capacity based on runs reported for 1932.
/ Actual pipe distance. Crude Petroleum 30 billion, Petroleum Products 2 billion, Crude Petroleum tons 79,376, Petroleum Products 3,456.



SECTION 70. EXTENT

ANALYSIS 70.2 Extent of Water Operations - Carlot (Common) Carriers - 1932

| | UNITED STATES | ATLANTIC COAST | ATLANTIC GULF | INTER-COASTAL | INLAND WATERS | GREAT LAKES | PACIFIC COAST |
|---|---|---|---|---|---|---|---|
| AGGREGATE STATISTICS | | | | | | | |
| Reporting Carriers | 103 | 32 | 9 | 11 | 8 | 17 | 26 |
| Route Miles | - | - | - | - | - | - | - |
| Main | 171,192 | 22,387 | 26,139 | 88,127 | 9,489 | 10,951 | 14,099 |
| Branch | - | xxx | xxx | xxx | xxx | xxx | xxx |
| Schedules* | 108,851 | 14,262 | 1,142 | 434 | 676 | 12,623 | 79,714 |
| Schedule Miles (thousands) | 20,684 | 5,689 | 2,854 | 5,912 | 846 | 1,882 | 3,518 |
| Schedule Hours (thousands) | 2,811 | 715 | 283 | 803 | 221 | 235 | 551 |
| Vehicles Originated | - | - | - | - | - | - | - |
| Locomotive Miles | - | - | - | - | - | - | - |
| Vehicle Miles - Total | - | - | - | - | - | - | - |
| Loaded | - | - | - | - | - | - | - |
| Empty | - | - | - | - | - | - | - |
| Ton Miles | - | - | - | - | - | - | - |
| Gross | - | - | - | - | - | - | - |
| Vehicle | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance (millions) | 18,132 | 1,764 | 2,714 | 10,001 | 1,481 | 1,144 | 1,028 |
| Water Distance (millions) | 32,872 | 1,989 | 3,390 | 22,880 | 2,367 | 1,284 | 962 |
| Capacity (millions) | 74,255 | 9,080 | 11,617 | 41,506 | 4,882 | 5,053 | 2,117 |
| Tons Originated | 18,769 | 4,680 | 2,286 | 3,917 | 2,292 | 3,000 | 2,594 |
| AVERAGE STATISTICS | | | | | | | |
| Density per | | | | | | | |
| Route Mile | | | | | | | |
| Schedules | .64 | .637 | .044 | .005 | .071 | 1.154 | 5.654 |
| Schedule Miles | 1.21 | 254.12 | 108.42 | 67.09 | 89.16 | 171.86 | 249.52 |
| Locomotive Miles | - | - | - | - | - | - | - |
| Vehicle Miles - Loaded | - | - | - | - | - | - | - |
| Gross Ton Miles - Total | - | - | - | - | - | - | - |
| Vehicle Ton Miles | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance | 105,916 | 78,832 | 103,830 | 113,495 | 156,113 | 104,544 | 72,943 |
| Water Distance | 192,018 | 88,862 | 129,691 | 259,634 | 249,523 | 117,288 | 68,286 |
| Density per | | | | | | | |
| Schedule Mile | | | | | | | |
| Locomotive Miles | - | - | - | - | - | - | - |
| Vehicle Miles - Loaded | - | - | - | - | - | - | - |
| Gross Ton Miles - Total | - | - | - | - | - | - | - |
| Vehicle | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance | 881 | 310 | 957 | 1,691 | 1,719 | 608 | 292 |
| Water Distance | 1,594 | 349 | 1,196 | 3,869 | 2,797 | 689 | 279 |
| Density per | | | | | | | |
| Vehicle Mile | | | | | | | |
| Gross Ton Miles | - | - | - | - | - | - | - |
| Vehicle Ton Miles | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance | - | - | - | - | - | - | - |
| Water Distance | - | - | - | - | - | - | - |
| Equated Ton Miles | | | | | | | |
| Density per | | | | | | | |
| Schedule Hour | | | | | | | |
| Gross Ton Miles | - | - | - | - | - | - | - |
| Vehicle Ton Miles | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance | 6,457 | 2,467 | 9,584 | 12,448 | 6,674 | 4,861 | 1,863 |
| Water Distance | 11,706 | 2,781 | 11,972 | 28,477 | 10,667 | 5,453 | 1,744 |

* Vessel trips.

SECTION 70. EXTENT

ANALYSIS 70.3 Extent of Water Operations - Cargo (Contract and Private) Carriers - 1932

| | UNITED STATES | ATLANTIC COAST | ATLANTIC GULF | INTER-COASTAL | INLAND WATERS | GREAT LAKES | PACIFIC COAST |
|---|---|---|---|---|---|---|---|
| AGGREGATE STATISTICS | | | | | | | |
| Reporting Carriers | 65 | 13 | 2 | 2 | 5 | 36 | 7 |
| Route Miles | - | - | - | - | - | - | - |
| Main | 92,885 | 18,513 | 9,150 | 6,100 | 4,110 | 49,426 | 5,586 |
| Branch | - | xxx | xxx | xxx | xxx | xxx | xxx |
| Schedules* | 3,952 | 518 | 38 | 16 | 230 | 2,180 | 970 |
| Schedule Miles (thousands) | 4,163 | 547 | 161 | 192 | 245 | 2,876 | 142 |
| Schedule Hours (thousands) | 716 | 90 | 31 | 34 | 67 | 360 | 134 |
| Vehicles Originates | - | - | - | - | - | - | - |
| Locomotive Miles | - | - | - | - | - | - | - |
| Vehicle Miles - Total | - | - | - | - | - | - | - |
| Loaded | - | - | - | - | - | - | - |
| Empty | - | - | - | - | - | - | - |
| Ton Miles | - | - | - | - | - | - | - |
| Gross | - | - | - | - | - | - | - |
| Vehicle | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance (millions) | 18,944 | 2,143 | 859 | 136 | 349 | 15,391 | 66 |
| Water Distance (millions) | 20,051 | 2,179 | 986 | 289 | 643 | 15,888 | 66 |
| Capacity (millions) | 40,818 | 3,864 | 1,828 | 903 | 1,400 | 32,423 | 400 |
| Tons Originated | 28,149 | 3,372 | 519 | 48 | 586 | 23,762 | 162 |
| AVERAGE STATISTICS | | | | | | | |
| Density per Route Mile | | | | | | | |
| Schedules | .043 | .014 | .003 | .001 | .052 | .023 | .066 |
| Schedule Miles | .48 | 29.55 | 17.60 | 31.48 | 59.61 | 58.19 | 79.13 |
| Locomotive Miles | - | - | - | - | - | - | - |
| Vehicle Miles - Loaded | - | - | - | - | - | - | - |
| Gross Ton Miles - Total | - | - | - | - | - | - | - |
| Vehicle Ton Miles | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance | 203,951 | 115,769 | 93,975 | 22,406 | 85,062 | 311,406 | 11,856 |
| Water Distance | 215,869 | 117,723 | 107,821 | 47,537 | 156,673 | 321,456 | 11,856 |
| Density per Schedule Mile | | | | | | | |
| Locomotive Miles | - | - | - | - | - | - | - |
| Vehicle Miles - Loaded | - | - | - | - | - | - | - |
| Gross Ton Miles - Total | - | - | - | - | - | - | - |
| Vehicle | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance | 4,245 | 3,912 | 5,334 | 708 | 1,421 | 5,350 | 119 |
| Water Distance | 4,493 | 3,978 | 6,120 | 1,504 | 2,618 | 5,523 | 119 |
| Density per Vehicle Mile | | | | | | | |
| Gross Ton Miles | - | - | - | - | - | - | - |
| Vehicle Ton Miles | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance | - | - | - | - | - | - | - |
| Water Distance | - | - | - | - | - | - | - |
| Equated Ton Miles | | | | | | | |
| Density per Schedule Hour | | | | | | | |
| Gross Ton Miles | - | - | - | - | - | - | - |
| Vehicle Ton Miles | - | - | - | - | - | - | - |
| Net Ton Miles | | | | | | | |
| Railroad Distance | 26,458 | 23,655 | 27,224 | 3,954 | 5,150 | 42,711 | 493 |
| Water Distance | 28,004 | 24,055 | 31,236 | 8,390 | 9,487 | 44,090 | 493 |

* Vessel trips.



SECTION 70. EXTENT

ANALYSIS 70.4 Extent of Rail Operations - 1932

| | UNITED STATES | NEW ENGLAND | CENTRAL EAST | POCA-HONTAS | SOUTH-EAST | NORTH-WEST | SOUTH-WEST |
|---|---|---|---|---|---|---|---|
| AGGREGATE STATISTICS | | | | | | | |
| Reporting Carriers* | 160 | 9 | 55 | 4 | 30 | 22 | 40 |
| Route Miles (thousands) | 243 | 7 | 53 | 6 | 40 | 68 | 69 |
| Main | 167 | 5 | 42 | 5 | 30 | 42 | 43 |
| Branch | 76 | 2 | 11 | 1 | 10 | 26 | 26 |
| Schedules (thousands) | 5,333 | 248 | 2,324 | 295 | 634 | 1,123 | 709 |
| Schedule Hours (thousands) | 24,407 | 852 | 9,415 | 1,303 | 3,098 | 5,838 | 3,901 |
| Schedule Miles (millions) # | 391 | 12 | 145 | 17 | 54 | 97 | 65 |
| Locomotive Miles (millions) # | 398 | 13 | 148 | 17 | 55 | 98 | 67 |
| Vehicles Originated (thousands) ∮ | 27,147 | 1,348 | 10,788 | 1,679 | 4,166 | 4,329 | 4,837 |
| Vehicle Miles - Total (millions) | 17,066 | 506 | 6,868 | 1,047 | 2,019 | 3,572 | 3,054 |
| Loaded | 10,333 | 346 | 4,340 | 558 | 1,151 | 2,338 | 1,600 |
| Empty # | 6,733 | 160 | 2,528 | 489 | 868 | 1,234 | 1,454 |
| Tons Originated (millions) # | 646 | 14 | 273 | 76 | 85 | 90 | 108 |
| Ton Miles (billions) | | | | | | | |
| Net (revenue) | 236 | 6 | 107 | 21 | 26 | 45 | 29 |
| Equated | 456 | 12 | 208 | 41 | 50 | 88 | 57 |
| Vehicle | 648 | 18 | 282 | 45 | 70 | 140 | 94 |
| Gross | 747 | 21 | 322 | 50 | 82 | 163 | 109 |
| AVERAGE STATISTICS | | | | | | | |
| Density per Route Mile | | | | | | | |
| Schedules | 22 | 34 | 44 | 48 | 16 | 16 | 10 |
| Schedule Miles | 1,610 | 1,709 | 2,731 | 2,790 | 1,353 | 1,419 | 964 |
| Locomotive Miles | 1,637 | 1,737 | 2,776 | 2,836 | 1,376 | 1,443 | 980 |
| Vehicle Miles - Loaded | 42,554 | 47,779 | 81,620 | 91,540 | 28,993 | 34,265 | 23,401 |
| Net Ton Miles (thousands) | 970 | 833 | 2,020 | 3,491 | 655 | 666 | 431 |
| Equated Ton Miles (thousands) | 1,877 | 1,612 | 3,907 | 6,753 | 1,268 | 1,287 | 834 |
| Vehicle Ton Miles (thousands) | 2,670 | 2,520 | 5,298 | 7,303 | 1,773 | 2,050 | 1,369 |
| Gross Ton Miles (thousands) | 3,075 | 2,949 | 6,050 | 8,194 | 2,080 | 2,386 | 1,597 |
| Schedule Mile | | | | | | | |
| Locomotive Miles | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 |
| Vehicle Miles - Loaded | 26,420 | 27,960 | 29,890 | 32,810 | 21,420 | 24,140 | 24,280 |
| Net Ton Miles | 600 | 490 | 740 | 1,250 | 480 | 470 | 450 |
| Equated Ton Miles | 1,170 | 940 | 1,430 | 2,420 | 940 | 910 | 870 |
| Vehicle Ton Miles | 1,660 | 1,470 | 1,940 | 2,620 | 1,310 | 1,440 | 1,420 |
| Gross Ton Miles | 1,910 | 1,730 | 2,220 | 2,940 | 1,520 | 1,680 | 1,660 |
| Vehicle Mile - Loaded | | | | | | | |
| Net Ton Mile | 22.80 | 17.44 | 24.75 | 38.44 | 22.61 | 19.42 | 18.42 |
| Equated Ton Mile | 44.11 | 33.73 | 47.87 | 73.77 | 43.73 | 37.57 | 35.64 |
| Vehicle Ton Miles | 62.75 | 52.74 | 64.91 | 79.78 | 61.16 | 59.84 | 58.52 |
| Gross Ton Miles | 72.27 | 61.73 | 74.12 | 89.51 | 71.94 | 69.64 | 68.23 |
| Schedule Hour | | | | | | | |
| Net Ton Miles | 9,650 | 7,080 | 11,410 | 16,350 | 8,400 | 7,780 | 7,560 |
| Equated Ton Miles | 18,670 | 13,700 | 22,060 | 31,630 | 16,250 | 15,040 | 14,620 |
| Vehicle Ton Miles | 26,570 | 21,420 | 29,920 | 34,210 | 22,720 | 23,960 | 24,010 |
| Gross Ton Miles | 30,600 | 25,060 | 34,170 | 38,380 | 26,590 | 27,880 | 27,990 |

* Includes 13 Switching and Terminal Companies.
# From Interstate Commerce Commission.
∮ Carload Cars from Interstate Commerce Commission; L.C.L. Cars from A.R.A., distributed to territories on the percentage distribution of L.C.L. Tons from the I.C.C.

SECTION 70. EXTENT

Analysis 70.5 Service Units of Rail Operating Districts by States - 1932

| | | ROUTE MILES | | SCHEDULES | | | LOADED | TON MILES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MAIN | BRANCH | NUMBER (000) | MILES (000) | HOURS (000) | CAR MILES (000,000) | NET (000,000) | EQUATED (000,000) | VEHICLE (000,000) | GROSS (000,000) |
| UNITED STATES | | 166,864 | 79,957 | 5,333 | 391,053 | 24,407 | 10,333 | 235,638 | 455,788 | 648,393 | 746,772 |
| NEW ENGLAND | | 5,200 | 2,433 | 218 | 12,376 | 852 | 346 | 6,034 | 11,672 | 18,250 | 21,359 |
| 06 | Connecticut | 1,118 | 264 | 65 | 2,981 | 188 | 101 | 1,740 | 3,365 | 5,273 | 6,146 |
| 23 | Maine | 1,393 | 894 | 58 | 3,172 | 210 | 69 | 1,315 | 2,542 | 3,893 | 4,563 |
| 25 | Massachusetts | 1,317 | 532 | 88 | 4,053 | 298 | 109 | 1,905 | 3,686 | 5,807 | 6,808 |
| 34 | New Hampshire | 435 | 641 | 8 | 472 | 35 | 15 | 276 | 534 | 799 | 922 |
| 45 | Rhode Island | 239 | 43 | 12 | 653 | 42 | 23 | 367 | 711 | 1,195 | 1,389 |
| 53 | Vermont | 698 | 59 | 17 | 1,045 | 79 | 29 | 431 | 834 | 1,283 | 1,531 |
| TRUNK LINE | | 14,346 | 7,224 | 1,263 | 59,028 | 4,234 | 1,881 | 48,246 | 93,321 | 122,280 | 139,836 |
| 07 | Delaware | 175 | 276 | 10 | 754 | 59 | 19 | 341 | 659 | 1,122 | 1,275 |
| 24 | Maryland | 803 | 296 | 50 | 3,014 | 232 | 94 | 2,442 | 4,724 | 6,093 | 7,029 |
| 35 | New Jersey | 1,120 | 714 | 118 | 4,587 | 323 | 118 | 3,361 | 6,501 | 8,015 | 9,135 |
| 37 | New York | 6,598 | 1,278 | 362 | 20,642 | 1,337 | 704 | 15,323 | 29,640 | 43,206 | 49,484 |
| 44 | Pennsylvania | 5,650 | 4,660 | 723 | 30,031 | 2,283 | 946 | 26,779 | 51,797 | 63,844 | 72,913 |
| CENTRAL | | 32,534 | 5,825 | 1,061 | 86,166 | 5,181 | 2,459 | 59,148 | 114,407 | 159,382 | 181,828 |
| 13 | Illinois | 10,182 | 2,351 | 346 | 27,949 | 1,608 | 728 | 16,353 | 31,631 | 46,228 | 52,700 |
| 15 | Indiana | 4,624 | 409 | 140 | 12,358 | 690 | 368 | 7,982 | 15,440 | 23,275 | 26,433 |
| 26 | Michigan | 5,654 | 1,637 | 152 | 11,884 | 702 | 288 | 5,899 | 11,409 | 17,615 | 20,461 |
| 41 | Ohio | 12,074 | 1,428 | 423 | 33,975 | 2,181 | 1,075 | 28,914 | 55,927 | 72,264 | 82,234 |
| POCAHONTAS | | 6,339 | 1,406 | 295 | 17,023 | 1,302 | 558 | 21,300 | 41,201 | 44,555 | 49,990 |
| 54 | Virginia | 3,767 | 396 | 124 | 9,059 | 568 | 289 | 10,542 | 20,391 | 22,438 | 25,218 |
| 57 | West Virginia | 2,572 | 1,010 | 171 | 7,964 | 734 | 269 | 10,758 | 20,810 | 22,117 | 24,772 |
| SOUTHEASTERN | | 25,537 | 9,314 | 634 | 53,721 | 3,098 | 1,151 | 26,018 | 50,326 | 70,383 | 81,750 |
| 01 | Alabama | 4,285 | 1,241 | 91 | 8,078 | 455 | 160 | 3,338 | 6,457 | 9,307 | 11,001 |
| 09 | Florida | 2,679 | 2,040 | 60 | 4,364 | 238 | 50 | 1,174 | 2,271 | 3,953 | 4,855 |
| 10 | Georgia | 5,229 | 2,122 | 97 | 9,445 | 520 | 189 | 3,319 | 6,421 | 11,027 | 12,920 |
| 20 | Kentucky | 2,899 | 912 | 130 | 10,467 | 588 | 280 | 9,019 | 17,444 | 20,040 | 22,493 |
| 28 | Mississippi | 2,814 | 355 | 65 | 4,670 | 304 | 106 | 2,054 | 3,973 | 5,951 | 6,738 |
| 38 | North Carolina | 3,736 | 1,480 | 94 | 8,854 | 509 | 207 | 3,613 | 6,989 | 10,796 | 12,763 |
| 46 | South Carolina | 1,393 | 146 | 16 | 1,589 | 96 | 30 | 592 | 1,144 | 1,658 | 1,987 |
| 48 | Tennessee | 2,502 | 1,018 | 81 | 6,254 | 388 | 129 | 2,909 | 5,627 | 7,651 | 8,993 |
| WESTERN TRUNK LINE | | 35,481 | 23,720 | 922 | 77,458 | 4,635 | 1,808 | 35,080 | 67,854 | 108,130 | 125,502 |
| 16 | Iowa | 6,421 | 3,661 | 190 | 16,631 | 925 | 354 | 6,651 | 12,864 | 21,470 | 25,217 |
| 18 | Kansas | 4,798 | 4,747 | 156 | 13,643 | 772 | 334 | 6,646 | 12,856 | 20,227 | 23,356 |
| 27 | Minnesota | 5,594 | 2,403 | 88 | 7,669 | 503 | 172 | 3,824 | 7,397 | 10,482 | 12,133 |
| 29 | Missouri | 4,986 | 2,706 | 154 | 12,470 | 694 | 315 | 6,038 | 11,679 | 18,849 | 21,645 |
| 32 | Nebraska | 3,481 | 3,981 | 127 | 10,018 | 595 | 254 | 4,501 | 8,705 | 15,055 | 17,538 |
| 40 | North Dakota | 2,978 | 2,702 | 48 | 4,499 | 277 | 93 | 1,884 | 3,644 | 5,327 | 6,232 |
| 47 | South Dakota | 2,102 | 1,312 | 35 | 3,307 | 226 | 59 | 1,198 | 2,317 | 3,564 | 4,235 |
| 58 | Wisconsin | 5,121 | 2,208 | 121 | 9,221 | 643 | 227 | 4,338 | 8,392 | 13,156 | 15,146 |
| SOUTHWESTERN | | 23,613 | 12,051 | 467 | 41,247 | 2,377 | 902 | 17,746 | 34,326 | 55,307 | 64,167 |
| 07 | Arkansas | 2,883 | 1,692 | 73 | 6,318 | 350 | 149 | 3,029 | 5,859 | 8,712 | 9,731 |
| 22 | Louisiana | 2,749 | 1,486 | 62 | 4,701 | 281 | 92 | 2,085 | 4,033 | 5,712 | 6,464 |
| 36 | New Mexico | 1,671 | 1,179 | 26 | 3,277 | 171 | 92 | 1,680 | 3,249 | 5,822 | 6,785 |
| 42 | Oklahoma | 4,481 | 1,639 | 83 | 6,870 | 437 | 136 | 2,883 | 5,576 | 8,692 | 10,221 |
| 50 | Texas | 11,826 | 6,055 | 223 | 20,081 | 1,138 | 433 | 8,069 | 15,609 | 26,369 | 30,966 |
| PACIFIC NORTHWEST | | 11,212 | 8,610 | 200 | 19,374 | 1,204 | 530 | 10,328 | 19,978 | 31,763 | 37,313 |
| 12 | Idaho | 1,154 | 1,513 | 43 | 2,813 | 175 | 70 | 1,399 | 2,707 | 4,178 | 4,959 |
| 31 | Montana | 3,758 | 1,933 | 43 | 4,875 | 301 | 159 | 3,177 | 6,144 | 9,549 | 11,128 |
| 43 | Oregon | 1,529 | 2,256 | 19 | 2,852 | 188 | 56 | 1,142 | 2,209 | 3,241 | 3,880 |
| 56 | Washington | 3,496 | 2,738 | 55 | 4,852 | 346 | 96 | 2,146 | 4,151 | 5,963 | 7,177 |
| 59 | Wyoming | 1,275 | 170 | 40 | 3,982 | 194 | 149 | 2,461 | 4,767 | 8,859 | 10,169 |
| PACIFIC SOUTHWEST | | 12,602 | 5,374 | 243 | 21,660 | 1,521 | 698 | 11,738 | 22,703 | 38,343 | 45,027 |
| 02 | Arizona | 1,057 | 675 | 17 | 2,977 | 163 | 96 | 1,633 | 3,158 | 6,187 | 7,120 |
| 04 | California | 4,719 | 2,602 | 99 | 10,504 | 688 | 268 | 5,055 | 9,778 | 16,110 | 19,261 |
| 05 | Colorado | 4,249 | 1,090 | 86 | 6,175 | 395 | 152 | 1,689 | 3,266 | 5,156 | 6,139 |
| 33 | Nevada | 1,470 | 643 | 13 | 2,780 | 146 | 116 | 2,160 | 4,178 | 7,089 | 7,919 |
| 52 | Utah | 1,107 | 364 | 28 | 2,224 | 132 | 66 | 1,201 | 2,323 | 3,801 | 4,588 |



SECTION 70. EXTENT

Analysis 70.6 Rail Traffic Density per Route Mile (by States) - 1932

| | NUMBER OF SERVICE UNITS PER ROUTE MILE | | | | | | |
|---|---|---|---|---|---|---|---|
| | SCHEDULES | | | LOADED CAR MILES (000) | TON MILES | | |
| OPERATING DISTRICT | NUMBER | MILES | HOURS | | NET (000) | EQUATED (000) | VEHICLE (000) | GROSS (000) |
| UNITED STATES | 21.96 | 1,610.71 | 100.53 | 43 | 970 | 1,877 | 2,670 | 3,075 |
| NEW ENGLAND | 32.50 | 1,621.40 | 111.64 | 45 | 791 | 1,530 | 2,391 | 2,798 |
| 06 Connecticut | 47.21 | 2,157.70 | 136.17 | 73 | 1,259 | 2,435 | 3,817 | 4,448 |
| 23 Maine | 25.39 | 1,387.47 | 92.08 | 30 | 575 | 1,112 | 1,703 | 1,995 |
| 25 Massachusetts | 47.30 | 2,192.52 | 161.12 | 59 | 1,031 | 1,994 | 3,111 | 3,682 |
| 34 New Hampshire | 7.56 | 438.62 | 32.22 | 14 | 257 | 497 | 742 | 857 |
| 45 Rhode Island | 42.81 | 2,303.60 | 146.94 | 80 | 1,296 | 2,507 | 4,216 | 4,902 |
| 53 Vermont | 22.62 | 1,380.54 | 104.79 | 38 | 570 | 1,103 | 1,696 | 2,023 |
| TRUNK LINE | 58.54 | 2,741.33 | 196.64 | 87 | 2,241 | 4,335 | 5,679 | 6,494 |
| 07 Delaware | 21.67 | 1,672.95 | 131.53 | 42 | 757 | 1,464 | 2,492 | 2,830 |
| 24 Maryland | 45.71 | 2,743.11 | 210.87 | 85 | 2,223 | 4,300 | 5,945 | 6,397 |
| 35 New Jersey | 64.27 | 2,500.28 | 176.15 | 64 | 1,832 | 3,544 | 4,369 | 4,979 |
| 37 New York | 46.91 | 2,620.79 | 169.79 | 89 | 1,945 | 3,762 | 5,485 | 6,283 |
| 44 Pennsylvania | 70.32 | 2,923.46 | 222.22 | 92 | 2,607 | 5,043 | 6,215 | 7,098 |
| CENTRAL | 27.66 | 2,246.27 | 135.05 | 61 | 1,542 | 2,983 | 4,155 | 4,740 |
| 13 Illinois | 27.64 | 2,229.92 | 128.26 | 58 | 1,305 | 2,524 | 3,688 | 4,205 |
| 15 Indiana | 27.75 | 2,455.30 | 137.08 | 73 | 1,586 | 3,068 | 4,624 | 5,252 |
| 26 Michigan | 20.92 | 1,629.86 | 96.32 | 40 | 809 | 1,565 | 2,416 | 2,806 |
| 41 Ohio | 31.35 | 2,516.39 | 161.51 | 80 | 2,141 | 4,141 | 5,352 | 6,090 |
| POCAHONTAS | 38.11 | 2,197.75 | 168.16 | 72 | 2,750 | 5,319 | 5,752 | 6,454 |
| 54 Virginia | 29.83 | 2,175.90 | 136.50 | 69 | 2,532 | 4,898 | 5,389 | 6,057 |
| 57 West Virginia | 47.74 | 2,223.27 | 204.97 | 75 | 3,004 | 5,811 | 6,175 | 6,916 |
| SOUTHEASTERN | 18.19 | 1,541.45 | 88.89 | 33 | 747 | 1,445 | 2,020 | 2,346 |
| 01 Alabama | 16.40 | 1,461.87 | 82.42 | 29 | 604 | 1,168 | 1,684 | 1,991 |
| 09 Florida | 12.70 | 921.89 | 50.51 | 11 | 249 | 482 | 838 | 1,029 |
| 10 Georgia | 13.18 | 1,284.97 | 70.73 | 26 | 452 | 874 | 1,500 | 1,758 |
| 20 Kentucky | 34.16 | 2,747.04 | 154.38 | 73 | 2,367 | 4,578 | 5,259 | 5,903 |
| 28 Mississippi | 20.46 | 1,473.67 | 95.95 | 33 | 648 | 1,253 | 1,878 | 2,126 |
| 38 North Carolina | 18.11 | 1,697.14 | 97.46 | 40 | 693 | 1,340 | 2,070 | 2,447 |
| 46 South Carolina | 10.65 | 1,032.55 | 62.37 | 19 | 384 | 743 | 1,077 | 1,291 |
| 48 Tennessee | 22.94 | 1,776.17 | 110.03 | 37 | 826 | 1,598 | 2,173 | 2,554 |
| WESTERN TRUNK LINE | 15.57 | 1,308.40 | 78.29 | 31 | 593 | 1,147 | 1,827 | 2,120 |
| 16 Iowa | 18.80 | 1,649.63 | 91.71 | 36 | 660 | 1,277 | 2,130 | 2,501 |
| 18 Kansas | 16.39 | 1,429.36 | 80.92 | 35 | 696 | 1,346 | 2,119 | 2,447 |
| 27 Minnesota | 11.04 | 958.92 | 62.85 | 21 | 478 | 925 | 1,311 | 1,517 |
| 29 Missouri | 20.03 | 1,621.14 | 90.26 | 41 | 785 | 1,518 | 2,450 | 2,814 |
| 32 Nebraska | 17.00 | 1,342.61 | 79.74 | 34 | 603 | 1,166 | 2,018 | 2,351 |
| 40 North Dakota | 6.52 | 792.11 | 48.86 | 16 | 332 | 642 | 938 | 1,097 |
| 47 South Dakota | 10.22 | 968.50 | 66.10 | 17 | 351 | 679 | 1,044 | 1,210 |
| 58 Wisconsin | 16.87 | 1,258.23 | 87.71 | 31 | 592 | 1,145 | 1,795 | 2,067 |
| SOUTHWESTERN | 13.08 | 1,156.55 | 66.66 | 25 | 498 | 963 | 1,551 | 1,799 |
| 05 Arkansas | 15.96 | 1,380.97 | 76.61 | 33 | 662 | 1,280 | 1,904 | 2,127 |
| 22 Louisiana | 14.58 | 1,109.85 | 66.31 | 22 | 492 | 952 | 1,349 | 1,526 |
| 36 New Mexico | 9.03 | 1,149.98 | 60.03 | 32 | 589 | 1,139 | 2,043 | 2,381 |
| 42 Oklahoma | 13.63 | 1,121.98 | 71.31 | 22 | 471 | 911 | 1,420 | 1,669 |
| 50 Texas | 12.48 | 1,123.07 | 63.65 | 24 | 451 | 872 | 1,475 | 1,732 |
| PACIFIC NORTHWEST | 10.12 | 977.46 | 60.74 | 27 | 521 | 1,008 | 1,602 | 1,882 |
| 12 Idaho | 16.20 | 1,054.44 | 65.67 | 26 | 524 | 1,013 | 1,566 | 1,899 |
| 31 Montana | 7.60 | 856.62 | 52.86 | 28 | 558 | 1,079 | 1,678 | 1,955 |
| 43 Oregon | 5.13 | 753.75 | 49.68 | 15 | 302 | 584 | 849 | 1,025 |
| 56 Washington | 8.86 | 778.37 | 55.46 | 15 | 344 | 665 | 957 | 1,151 |
| 59 Wyoming | 27.31 | 2,756.36 | 134.39 | 103 | 1,706 | 3,300 | 6,132 | 7,039 |
| PACIFIC SOUTHWEST | 13.50 | 1,371.83 | 84.77 | 39 | 653 | 1,263 | 2,133 | 2,505 |
| 02 Arizona | 9.57 | 1,719.49 | 94.15 | 55 | 933 | 1,824 | 3,574 | 4,113 |
| 04 California | 13.56 | 1,434.80 | 93.95 | 37 | 690 | 1,335 | 2,200 | 2,631 |
| 05 Colorado | 16.18 | 1,156.42 | 73.96 | 28 | 316 | 611 | 966 | 1,150 |
| 33 Nevada | 6.17 | 1,315.81 | 69.22 | 55 | 1,022 | 1,977 | 3,355 | 3,748 |
| 52 Utah | 18.65 | 1,511.70 | 89.57 | 45 | 817 | 1,580 | 2,584 | 3,119 |

SECTION 70. EXTENT

Analysis 70.7 Rail Track Facilities by Operating Districts

| | MILES OF TRACK OPERATED | | | | | | YARDS & SIDINGS | EQUATED TRACK MILES |
|---|---|---|---|---|---|---|---|---|
| | ROAD | SECOND | THIRD | FOURTH | OTHER | INDUSTRIAL | | |
| UNITED STATES | 242,820.65 | 36,481.61 | 3,155.33 | 2,201.81 | 356.31 | 21,632.70 | 100,852.64 | 402,434.01 |
| EASTERN DISTRICT | 67,562.98 | 20,437.13 | 2,829.51 | 2,082.31 | 188.74 | 8,910.27 | 44,810.32 | 146,714.58 |
| SOUTHERN DISTRICT | 42,596.32 | 5,240.19 | 162.15 | 32.96 | 134.02 | 3,898.63 | 14,919.46 | 49,858.67 |
| WESTERN DISTRICT | 132,661.35 | 10,804.29 | 163.67 | 86.54 | 33.55 | 8,823.80 | 41,122.86 | 205,860.76 |
| NEW ENGLAND | 7,633.10 | 1,751.03 | 227.94 | 138.21 | 8.39 | 763.15 | 4,111.72 | 11,774.09 |
| 06 Connecticut | 1,381.55 | 447.68 | 91.53 | 85.95 | 3.21 | 230.71 | 1,052.81 | 2,528.41 |
| 23 Maine | 2,286.69 | 164.37 | 1.38 | 1.38 | - | 102.89 | 657.69 | 2,801.38 |
| 25 Massachusetts | 1,848.70 | 869.40 | 105.95 | 43.54 | 5.18 | 234.37 | 1,569.23 | 3,569.75 |
| 34 New Hampshire | 1,075.87 | 122.82 | - | - | - | 33.22 | 393.82 | 1,387.65 |
| 45 Rhode Island | 283.43 | 145.52 | 29.08 | 7.34 | - | 118.96 | 170.28 | 573.60 |
| 53 Vermont | 756.86 | 1.24 | - | - | - | 43.00 | 267.89 | 913.30 |
| TRUNK LINE | 21,570.43 | 8,567.51 | 1,660.99 | 1,311.85 | 54.56 | 2,864.20 | 16,980.09 | 39,760.86 |
| 07 Delaware | 450.47 | 174.58 | - | - | - | - | 204.56 | 692.41 |
| 24 Maryland | 1,098.83 | 461.92 | 50.52 | 32.29 | - | 220.12 | 812.08 | 1,053.73 |
| 35 New Jersey | 1,834.59 | 838.10 | 176.39 | 149.94 | 21.64 | 224.16 | 1,925.17 | 3,858.13 |
| 37 New York | 7,876.35 | 3,208.52 | 556.60 | 477.72 | 26.63 | 872.53 | 5,605.10 | 14,553.83 |
| 44 Pennsylvania | 10,310.19 | 3,884.39 | 877.48 | 651.90 | 6.29 | 1,547.46 | 8,433.18 | 19,602.76 |
| CENTRAL | 38,359.45 | 10,118.59 | 940.58 | 632.25 | 125.79 | 5,282.85 | 23,718.51 | 95,179.63 |
| 13 Illinois | 12,533.22 | 3,226.81 | 307.79 | 181.18 | 111.56 | 2,038.84 | 7,777.47 | 54,046.71 |
| 15 Indiana | 5,033.18 | 1,316.11 | 10.22 | 4.62 | - | 441.26 | 2,597.65 | 6,971.78 |
| 26 Michigan | 7,291.10 | 1,560.59 | 27.92 | 9.84 | - | 1,058.63 | 4,159.56 | 11,178.87 |
| 41 Ohio | 13,501.95 | 4,015.08 | 594.65 | 436.61 | 14.23 | 1,744.12 | 9,183.83 | 22,982.27 |
| POCAHONTAS | 7,745.44 | 1,688.80 | 137.73 | 24.96 | - | 1,009.10 | 3,407.54 | 11,116.72 |
| 54 Virginia | 4,163.64 | 888.96 | 18.94 | 8.30 | - | 408.08 | 1,855.79 | 5,710.30 |
| 57 West Virginia | 3,581.80 | 799.84 | 118.79 | 16.66 | - | 601.02 | 1,551.75 | 5,406.42 |
| SOUTHEASTERN | 34,850.88 | 3,551.39 | 24.42 | 8.00 | 134.02 | 2,889.53 | 11,511.92 | 38,741.95 |
| 01 Alabama | 5,525.94 | 379.44 | .36 | .38 | 23.68 | 638.14 | 1,916.69 | 7,123.51 |
| 09 Florida | 4,718.76 | 458.27 | - | - | - | 271.69 | 1,386.03 | 3,600.33 |
| 10 Georgia | 7,350.34 | 418.01 | 2.66 | 1.24 | 24.01 | 445.77 | 1,966.69 | 7,147.13 |
| 20 Kentucky | 3,810.34 | 936.76 | 18.74 | 5.96 | 33.18 | 457.85 | 1,823.06 | 5,746.52 |
| 28 Mississippi | 3,168.88 | 271.39 | - | - | 53.15 | 243.65 | 1,191.29 | 4,146.09 |
| 38 North Carolina | 5,216.78 | 810.65 | .63 | .42 | - | 344.72 | 1,463.88 | 4,582.27 |
| 46 South Carolina | 1,538.73 | 133.29 | 2.03 | - | - | 118.44 | 446.50 | 1,929.46 |
| 48 Tennessee | 3,521.11 | 143.58 | - | - | - | 369.07 | 1,318.18 | 4,466.64 |
| WESTERN TRUNK LINE | 59,200.40 | 5,402.44 | 131.92 | 69.17 | 9.84 | 3,875.94 | 17,137.92 | 114,117.94 |
| 16 Iowa | 10,081.82 | 1,257.09 | 9.41 | 8.68 | 9.84 | 449.70 | 2,258.38 | 12,717.89 |
| 18 Kansas | 9,544.52 | 532.58 | 25.44 | 5.34 | - | 628.44 | 2,630.97 | 51,294.55 |
| 27 Minnesota | 7,997.11 | 814.40 | 32.10 | 25.55 | - | 498.57 | 3,222.84 | 10,590.66 |
| 29 Missouri | 7,692.30 | 793.92 | 41.63 | 10.58 | - | 518.53 | 2,850.02 | 10,053.47 |
| 32 Nebraska | 7,461.44 | 521.36 | 2.69 | 2.70 | - | 626.90 | 1,782.78 | 9,087.76 |
| 40 North Dakota | 5,680.28 | 129.06 | - | - | - | 68.64 | 1,149.35 | 6,392.81 |
| 47 South Dakota | 3,414.50 | 198.11 | - | - | - | 90.07 | 554.34 | 3,895.20 |
| 58 Wisconsin | 7,328.43 | 1,155.62 | 20.65 | 16.32 | - | 995.09 | 2,689.24 | 10,125.60 |
| SOUTHWESTERN | 35,664.21 | 835.31 | 7.09 | .33 | 23.71 | 2,574.97 | 10,312.72 | 42,293.80 |
| 03 Arkansas | 4,575.01 | 269.90 | .61 | - | 20.69 | 234.24 | 1,452.63 | 5,255.57 |
| 22 Louisiana | 4,235.45 | 159.03 | 6.11 | - | 3.02 | 556.59 | 1,281.55 | 5,252.95 |
| 36 New Mexico | 2,850.14 | 66.96 | - | - | - | 130.12 | 876.46 | 3,403.84 |
| 42 Oklahoma | 6,123.11 | 100.98 | - | - | - | 562.11 | 1,525.52 | 7,218.70 |
| 50 Texas | 17,880.50 | 238.44 | .37 | .33 | - | 1,091.91 | 5,176.56 | 21,132.74 |
| PACIFIC NORTHWEST | 19,821.23 | 1,785.17 | 9.43 | 2.34 | - | 896.88 | 6,494.98 | 24,954.64 |
| 12 Idaho | 2,667.75 | 169.48 | - | - | - | 74.74 | 857.06 | 3,269.65 |
| 31 Montana | 5,690.87 | 301.02 | 2.14 | 2.34 | - | 124.31 | 1,724.17 | 6,858.72 |
| 43 Oregon | 3,784.41 | 182.63 | 2.43 | - | - | 244.51 | 969.87 | 4,539.64 |
| 56 Washington | 6,233.53 | 649.15 | 4.86 | - | - | 292.78 | 2,284.47 | 8,045.67 |
| 59 Wyoming | 1,444.67 | 482.89 | - | - | - | 160.54 | 659.41 | 2,240.96 |
| PACIFIC SOUTHWEST | 17,975.51 | 2,781.67 | 15.23 | 14.70 | - | 1,476.01 | 7,177.24 | 24,494.38 |
| 02 Arizona | 1,731.24 | 422.51 | - | - | - | 58.84 | 620.35 | 2,408.84 |
| 04 California | 7,821.06 | 953.98 | 14.21 | 14.70 | - | 769.75 | 3,634.73 | 10,255.07 |
| 05 Colorado | 5,339.34 | 625.23 | - | - | - | 448.46 | 1,703.10 | 6,915.30 |
| 33 Nevada | 2,112.94 | 822.70 | - | - | - | 28.21 | 448.87 | 2,767.12 |
| 52 Utah | 1,470.93 | 257.25 | 1.02 | - | - | 170.75 | 770.19 | 2,148.05 |



SECTION 70. EXTENT

Analysis 70.8 Extent of Pipe Operations - 1932

| | UNITED STATES | NORTH ATLANTIC | GREAT LAKES SOUTHWEST | SOUTHWEST GULF |
|---|---|---|---|---|
| Companies Reporting * | 46 | 12 | 16 | 18 |
| Miles Operated | 92,783 | 14,723 | 44,782 | 33,278 |
| Gross Investment | $763,941,669 | $ 54,844,979 | $319,191,416 | $389,905,274 |
| Net Investment # | $428,074,456 | $ 21,323,190 | $192,684,355 | $214,066,911 |
| Tons Originated | 82,827,629 | 2,821,372 | 25,097,698 | 54,908,559 |
| Ton-Miles Transported (Thousands) | 31,512,188 | 1,058,504 | 21,011,641 | 9,442,043 |
| REVENUES | $211,788,647 | $ 9,294,350 | $100,143,515 | $102,350,782 |
| Gathering Lines | $ 57,378,601 | $ 2,779,919 | $ 21,887,881 | $ 32,710,801 |
| Trunk Lines | $154,410,046 | $ 6,514,431 | $ 78,255,634 | $ 69,639,981 |
| COST | $101,964,942 | $ 6,757,043 | $ 48,485,271 | $ 46,722,628 |
| Gathering Lines - Total | 27,992,151 | 2,781,042 | 12,255,359 | 12,955,750 |
| Maintenance - Total | 11,580,056 | 1,071,149 | 4,943,162 | 5,565,145 |
| Repairs | 2,899,490 | 491,937 | 1,283,637 | 1,113,916 |
| Depreciation | 7,090,655 | 471,208 | 3,026,068 | 3,593,379 |
| Retirements | 1,599,911 | 108,304 | 633,457 | 858,150 |
| Transportation | 9,198,215 | 1,118,220 | 3,644,367 | 4,435,628 |
| Administration | 2,808,528 | 297,503 | 1,230,113 | 1,280,912 |
| Taxes | 4,405,352 | 293,870 | 2,437,717 | 1,673,765 |
| Trunk Lines - Total | 73,972,791 | 3,976,001 | 36,229,912 | 33,766,878 |
| Maintenance - Total | 36,775,063 | 1,575,294 | 17,226,987 | 17,972,782 |
| Repairs | 5,148,626 | 486,346 | 2,806,157 | 2,156,113 |
| Depreciation | 30,396,220 | 1,055,254 | 13,932,013 | 15,408,957 |
| Retirements | 930,223 | 33,694 | 488,817 | 407,712 |
| Transportation | 13,702,654 | 1,433,980 | 9,052,426 | 8,215,248 |
| Administration | 6,848,658 | 557,038 | 2,948,175 | 3,343,445 |
| Taxes | 11,646,416 | 409,689 | 7,001,324 | 4,235,403 |
| NET OPERATION INCOME | $109,823,705 | $ 2,537,307 | $ 51,658,244 | $ 55,628,154 |
| Gathering Lines | 29,386,450 | Dr. 1,123 | 9,632,522 | 19,755,051 |
| Trunk Lines | 80,437,255 | 2,538,430 | 42,025,722 | 35,873,103 |
| RETURN ON GROSS INVESTMENT | 14.38% | 4.65% | 15.57% | 14.76% |

* Actual - not ratio.
\# After depreciation.

SECTION 70. EXTENT

Analysis 70.9 Petroleum Pipe Line Mileage by States

| REGIONS AND STATES | MILES OF PIPE LINE OPERATED | | | | | |
|---|---|---|---|---|---|---|
| | ALL LINES | | TRUNK LINES | | GATHERING LINES | |
| | 1931 | 1926 | 1931 | 1926 | 1931 | 1926 |
| UNITED STATES - TOTAL | 111,660 | 90,170 | 58,020 | 44,470 | 53,640 | 45,700 |
| NORTH ATLANTIC - TOTAL | 11,093 | 14,023 | 3,943 | 6,973 | 7,150 | 7,050 |
| New York | 820 | 1,910 | 210 | 1,200 | 610 | 710 |
| Pennsylvania | 10,050 | 11,600 | 3,510 | 5,260 | 6,540 | 6,340 |
| New Jersey | 190 | 480 | 190 | 480 | - | - |
| Maryland | 33 | 33 | 33 | 33 | - | - |
| GREAT LAKES - TOTAL | 15,395 | 14,108 | 7,905 | 6,168 | 7,490 | 7,940 |
| Ohio | 8,360 | 9,010 | 2,580 | 2,690 | 5,780 | 6,320 |
| Michigan | 485 | 138 | 325 | 138 | 160 | - |
| Indiana | 2,390 | 1,990 | 1,980 | 1,540 | 410 | 450 |
| Illinois | 4,160 | 2,970 | 3,020 | 1,800 | 1,140 | 1,170 |
| SOUTHEAST - TOTAL | 7,485 | 7,660 | 860 | 970 | 6,625 | 6,690 |
| West Virginia | 5,230 | 5,400 | 320 | 400 | 4,910 | 5,000 |
| Kentucky | 2,240 | 2,230 | 540 | 570 | 1,700 | 1,660 |
| Tennessee | 15 | 30 | - | - | 15 | 30 |
| NORTHWEST - TOTAL | 9,127 | 7,699 | 4,632 | 4,179 | 4,495 | 3,520 |
| Iowa | 98 | 77 | 98 | 77 | - | - |
| Nebraska | 404 | 404 | 404 | 404 | - | - |
| Kansas | 6,940 | 5,650 | 3,440 | 2,430 | 3,500 | 3,220 |
| Colorado | 110 | 68 | 20 | 8 | 90 | 60 |
| Montana | 275 | 150 | 60 | 130 | 215 | 20 |
| Wyoming | 1,300 | 1,350 | 610 | 1,130 | 690 | 220 |
| SOUTHWEST - TOTAL | 62,960 | 41,670 | 36,900 | 22,970 | 26,060 | 18,700 |
| Missouri | 4,170 | 2,490 | 4,170 | 2,490 | - | - |
| Arkansas | 1,660 | 1,770 | 820 | 830 | 840 | 940 |
| Oklahoma | 24,500 | 19,180 | 10,990 | 8,220 | 13,510 | 10,960 |
| Texas | 29,340 | 15,530 | 18,880 | 9,470 | 10,460 | 6,060 |
| Louisiana | 2,790 | 2,610 | 1,890 | 1,890 | 900 | 720 |
| New Mexico | 500 | 90 | 150 | 70 | 350 | 20 |
| PACIFIC COAST - TOTAL | 5,600 | 5,010 | 3,780 | 3,210 | 1,820 | 1,800 |
| California | 5,600 | 5,010 | 3,780 | 3,210 | 1,820 | 1,800 |



SECTION 70. EXTENT

Analysis 70.10 Petroleum Pipe Line Mileage by Size of Line - 1931*

| INSIDE DIAMETER OF PIPE (inches) | ALL LINES | TRUNK LINES | GATHERING LINES |
|---|---|---|---|
| TOTAL | 111,660 | 58,020 | 53,640 |
| 2 | 21,450 | - | 21,450 |
| 3 | 9,970 | - | 9,970 |
| 3 plus to 4 minus | 3,070 | 3,070 | - |
| 4 | 16,410 | 4,520 | 11,890 |
| 6 | 18,500 | 11,140 | 7,360 |
| 6 plus to 8 minus | 2,970 | - | 2,970 |
| 8 | 26,290 | 26,290 | - |
| 10 | 8,270 | 8,270 | - |
| 12 | 4,700 | 4,700 | - |
| Over 12 | 30 | 30 | |

* Compiled from "Oil Pipe Lines in the United States", a release of the United States Department of Commerce, Bureau of Mines, May 3, 1932, pages 6 and 7.

Analysis 70.11 Integrated Refineries and Pipe Lines - Year 1931

| REFINING COMPANY | PIPE LINE MILEAGE OPERATED ALL LINES AGGREGATE | ALL LINES % OF TOTAL | TRUNK LINES AGGREGATE | TRUNK LINES % OF TOTAL | GATHERING LINES AGGREGATE | GATHERING LINES % OF TOTAL |
|---|---|---|---|---|---|---|
| ALL COMPANIES - TOTAL | 81,451 | 65% | 49,187 | 83% | 32,264 | 49% |
| Atlantic Refining Co. (Arkana Transit, Atlantic & Keystone Pipe Lines) | 1,454 | 1 | 1,180 | 2 | 274 | # |
| Barnsdall Corporation (Barnsdall & Great Lakes Pipe Lines) | 455 | # | - | - | 455 | 1 |
| Cities Service Co. (Arkansas, Crew Levick, Empire, Louisiana Oil & Texas-Empire Pipe Lines | 2,933 | 2 | 1,874 | 3 | 1,059 | 2 |
| Consolidated Oil Corporation (Alleghany, Consolidated, Fords Brook, Producers & Refiners, Sinclair Prairie & Union Pipe Lines) | 15,019 | 12 | 7,022 | 12 | 7,997 | 12 |
| Continental Oil Co. (Continental, Great Lakes & New Mexico Pipe Lines) | 1,798 | 1 | 1,237 | 2 | 561 | 1 |
| Gulf Oil Corporation of Pennsylvania (Gulf & Gulf Refining Pipe Lines) | 7,261 | 6 | 5,174 | 9 | 2,087 | 3 |
| Mid-Continent Petroleum Corporation (Cosden & Great Lakes Pipe Lines) | 2,438 | 2 | 1,238 | 2 | 1,200 | 2 |
| Ohio Oil Co. (Illinois & Pondera Pipe Lines) | 5,772 | 5 | 1,948 | 3 | 3,824 | 6 |
| Phillips Petroleum Co. (Bartex, Great Lakes, Independent & Phillips Pipe Lines) | 1,747 | 1 | 772 | 1 | 975 | 1 |
| Pure Oil Co. (Ajax, Great Lakes, Mountain State, Pure Oil & Pure Van Pipe Lines) | 834 | 1 | 314 | 1 | 520 | 1 |
| Shell Union Oil Corporation (Shell Oil & Shell Pipe Lines) | 4,412 | 4 | 3,847 | 6 | 565 | 1 |
| Socony-Vacuum Corporation (General Petroleum, General Magnolia Petroleum, Magnolia, Standard Oil, Vacuum Oil & White Eagle Oil Pipe Lines) | 7,370 | 6 | 4,843 | 8 | 2,527 | 4 |
| Standard Gas & Electric Co. (Deep Rock Oil Pipe Line) | 430 | # | - | - | 430 | 1 |
| Standard Oil Co. of California (Associated, Col-Tex Refining, Pasotex & Standard Oil Pipe Lines) | 1,862 | 1 | 1,254 | 2 | 608 | 1 |
| Standard Oil Co. of Indiana (Midwest Refining, Pondera, Stanolind Oil & Gas & Stanolind Pipe Lines) | 7,713 | 6 | 4,452 | 7 | 3,261 | 5 |
| Standard Oil Co. (New Jersey Corporation)(Ajax, Humble, Imperial, Oklahoma, Standard & Tuscarora Oil Pipe Lines) | 12,163 | 10 | 8,660 | 15 | 3,503 | 5 |
| Sun Oil Company (Sun, Sun Oil & Susquehanna Pipe Lines) | 857 | 1 | 772 | 1 | 85 | # |
| Texas Corporation (Texas, Texas-Empire Pipe Lines) | 906 | 1 | 906 | 2 | - | - |
| Tidewater Associated Oil Co. (Associated Oil, Associated, Branford Transit, Texas-Empire, Tidal Tidal Refining & Tidewater Pipe Lines) | 4,046 | 3 | 2,553 | 6 | 1,493 | 2 |
| Union Oil Association (Union Oil & Producers Transportation Pipe Lines) | 1,981 | 2 | 1,141 | 2 | 840 | 1 |

# Less than 1/2%



Analysis 70.12 Partly Integrated Refineries and Pipe Lines - Year 1931

| REFINING COMPANY | PIPE LINE MILEAGE OPERATED ALL LINES AGGREGATE | ALL LINES % OF TOTAL | TRUNK LINES AGGREGATE | TRUNK LINES % OF TOTAL | GATHERING LINES AGGREGATE | GATHERING LINES % OF TOTAL |
|---|---|---|---|---|---|---|
| ALL COMPANIES - TOTAL | 6,127 | 5% | 1,689 | 3% | 4,438 | 7% |
| American Republics Corp. - American Petroleum Co. (Texas) | 79 | # | 69 | # | 10 | # |
| Atlas Pipeline Co. (Inc.) - Total | 295 | # | 144 | # | 151 | # |
| Atlas Pipeline Co. (Inc.) | 120 | # | 57 | # | 63 | # |
| Spartan Refining Co. (Inc.) | 175 | # | 87 | # | 88 | # |
| British-American Oil Co. (Ltd.) - Toronto Pipe Line Co. | 42 | # | 0 | - | 42 | # |
| Houston Oil Co. of Texas - A third interest in certain lines owned by American Petroleum Co. (Texas) | 26 | # | 23 | # | 3 | # |
| Wm. F. Morgan (Inc.) Gulf Coast Pipe Line Co. | 6 | # | 0 | - | 6 | # |
| National Refining Co. - Total | 935 | 1 | - | - | 935 | 1 |
| National Pipe Line Co. | 245 | # | - | - | 245 | # |
| National Refining Co. of Oklahoma | 690 | 1 | - | - | 690 | 1 |
| South Penn Oil Co. - Bradford Transit Co. | 776 | 1 | - | - | 776 | 1 |
| Standard Oil Co. (Kansas) - Total | 100 | # | 79 | # | 21 | # |
| Standard Oil Co. (Ohio) - Ajax Pipe Line Co. | 785 | 1 | 785 | 1 | - | - |
| Texas Pacific Coal & Oil Co. of Texas - Thurber Pipe Line Co. | 185 | # | 90 | # | 95 | # |
| Valvoline Oil Co. - Total | 1,668 | 1 | 355 | 1 | 1,313 | 2 |

# Less than 1%

## SECTION 70. EXTENT

### Analysis 70.13 Independent Pipe Lines - Year 1931

| REFINING COMPANY | PIPE LINE MILEAGE OPERATED — ALL LINES AGGREGATE | ALL LINES % OF TOTAL | TRUNK LINES AGGREGATE | TRUNK LINES % OF TOTAL | GATHERING LINES AGGREGATE | GATHERING LINES % OF TOTAL |
|---|---|---|---|---|---|---|
| ALL COMPANIES - Total | 37,929 | 30% | 8,563 | 14% | 29,366 | 44% |
| NATIONAL TRANSIT COMPANY | 3,801 | 3 | 1,313 | 2 | 2,488 | 4 |
| "NORTHERN" GROUP - Total | 9,031 | 7 | 2,888 | 5 | 6,143 | 9 |
| Indiana Pipe Line Company | 821 | 1 | 650 | 1 | 171 | # |
| Buckeye Pipe Line Company | 7,263 | 6 | 1,487 | 3 | 5,776 | 9 |
| Northern Pipe Line Company | 630 | 1 | 630 | 1 | - | - |
| New York Transit Company | 317 | # | 121 | # | 196 | # |
| "SOUTHERN" GROUP - Total | 8,008 | 6 | 737 | 1 | 7,271 | 11 |
| Eureka Pipe Line Company | 4,656 | 4 | 166 | # | 4,490 | 7 |
| Southern Pipe Line Company | 261 | # | 261 | # | - | - |
| South West Pennsylvania Pipe Lines (Cumberland Pipe Line Company) | 3,091 | 2 | 310 | 1 | 2,781 | 4 |
| CRUDE TRANSIT COMPANY - Total | 25 | # | - | - | 25 | # |
| Elk Oil Company | 20 | # | - | - | 20 | # |
| Franklin Pipe Line Co. (Ltd.) | 5 | # | - | - | 5 | # |



## SECTION 71. DIRECTNESS

### Directness of Rail Service - Summary of All Carload Terminated December 13, 1933

| ORIGIN TERRITORY | CARS ORIGINATED | AVERAGE DEGREE OF CIRCUITY — DESTINATION TERRITORIES: UNITED STATES | EASTERN | SOUTHERN | WESTERN | NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 49,105 | 11% | 11% | 11% | 11% | 12% | 11% | 10% | 9% | 12% | 10% | 15% | 8% | 9% |
| EASTERN | 21,817 | 12 | 11 | 14 | 12 | 12 | 11 | 12 | 13 | 14 | 11 | 16 | 11 | 12 |
| SOUTHERN | 9,857 | 10 | 10 | 10 | 13 | 11 | 12 | 9 | 7 | 12 | 13 | 17 | 3 | 13 |
| WESTERN | 17,131 | 10 | 10 | 11 | 10 | 11 | 10 | 10 | 13 | 11 | 10 | 14 | 7 | 8 |
| NEW ENGLAND | 1,861 | 10 | 10 | 11 | 10 | 10 | 9 | 12 | 11 | 11 | 8 | 13 | 12 | 9 |
| TRUNK LINE | 9,972 | 11 | 11 | 14 | 14 | 12 | 10 | 12 | 16 | 13 | 11 | 16 | 13 | 17 |
| CENTRAL | 9,984 | 12 | 12 | 14 | 12 | 13 | 12 | 11 | 12 | 15 | 11 | 16 | 11 | 11 |
| POCAHONTAS | 3,584 | 9 | 10 | 6 | 13 | 12 | 12 | 8 | 5 | 12 | 13 | 18 | 5 | - |
| SOUTHEASTERN | 6,273 | 11 | 10 | 12 | 13 | 10 | 12 | 10 | 13 | 11 | 12 | 17 | 2 | 13 |
| WESTERN TRUNK LINE | 7,776 | 10 | 9 | 12 | 11 | 10 | 10 | 8 | 11 | 13 | 9 | 17 | 9 | 11 |
| SOUTHWESTERN | 4,198 | 14 | 14 | 13 | 14 | 14 | 13 | 14 | 23 | 13 | 18 | 13 | 15 | 5 |
| PACIFIC NORTHWEST | 2,305 | 8 | 10 | 11 | 6 | 27 | 11 | 10 | 0 | 11 | 6 | 10 | 4 | 4 |
| PACIFIC SOUTHWEST | 2,852 | 9 | 10 | 8 | 9 | 11 | 9 | 11 | 9 | 7 | 9 | 8 | 11 | 8 |

SECTION 71. DIRECTNESS

Analysis 71.2 Directness of Rail Service - Commodity Summary of Carloads (Terminated December 13, 1933) Originated in United States and in New England Territories

| ORIGIN TERRITORY COMMODITY GROUP | AVERAGE DEGREE OF CIRCUITY — DESTINATION TERRITORIES: UNITED STATES | NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | | | | | | | | | | |
| ALL COMMODITIES | 11% | 12% | 11% | 10% | 9% | 12% | 10% | 9% | 8% | 9% |
| I ROUGH MATERIAL* | 11 | 15 | 9 | 8 | 11 | 9 | 34 | 11 | 0 | 5 |
| Sand, Stone and Gravel | 11 | 15 | 9 | 8 | 11 | 9 | 34 | 11 | 0 | 5 |
| II RAW MATERIAL* | 9 | 9 | 10 | 9 | 6 | 10 | 8 | 16 | 6 | 7 |
| Bulk Grain and Beets | 9 | 15 | 6 | 13 | 18 | 8 | 1 | 78 | 5 | 10 |
| Perishables | 9 | 9 | 8 | 8 | 9 | 10 | 8 | 12 | 6 | 6 |
| Live Animals | 7 | 8 | 11 | 5 | 9 | 5 | 7 | 6 | 5 | 6 |
| Coal and Coke | 9 | 9 | 10 | 9 | 4 | 9 | 10 | 14 | 11 | 7 |
| Ores | 9 | 9 | 11 | 15 | 3 | 7 | 6 | 15 | 1 | 4 |
| Sulphur & Sulphuric Acid | 11 | 3 | 5 | 11 | 7 | 12 | 13 | 14 | 4 | 18 |
| Forest Products | 11 | 11 | 15 | 10 | 13 | 11 | 10 | 14 | 3 | 5 |
| III SEMI-PROCESSED MATERIAL* | 13 | 13 | 12 | 12 | 15 | 15 | 13 | 14 | 8 | 13 |
| Cotton, Hay and Tobacco | 14 | 14 | 15 | 16 | 15 | 15 | 11 | 13 | 6 | 11 |
| Paper and Products | 13 | 11 | 11 | 11 | 15 | 15 | 14 | 21 | 9 | 15 |
| IV NECESSARIES* | 11 | 12 | 10 | 12 | 16 | 12 | 11 | 14 | 9 | 12 |
| Cereals | 13 | 14 | 10 | 16 | 15 | 12 | 11 | 16 | 8 | 17 |
| Miscellaneous Farm Products | 12 | 18 | 11 | 11 | 29 | 12 | 10 | 9 | 0 | 12 |
| Edible Animal Products | 10 | 10 | 9 | 8 | 11 | 12 | 6 | 12 | 18 | 10 |
| Oils, Vegetable & Animal | 16 | 9 | 16 | 16 | 15 | 14 | 20 | 19 | 12 | 11 |
| Manufactured Food | 11 | 24 | 10 | 12 | 11 | 10 | 9 | 14 | 10 | 12 |
| Textiles and Leather | 11 | 8 | 11 | 11 | 9 | 14 | 11 | 10 | 2 | 11 |
| V AUXILIARIES* | 14 | 17 | 14 | 15 | 13 | 14 | 16 | 11 | 10 | 12 |
| Petroleum and Products | 15 | 14 | 75 | 16 | 8 | 15 | 17 | 10 | 3 | 7 |
| Building Materials | 15 | 14 | 15 | 17 | 15 | 14 | 15 | 14 | 11 | 12 |
| Chemicals | 12 | 9 | 15 | 9 | 23 | 11 | 14 | 15 | 5 | 13 |
| Miscellaneous | 14 | 21 | 13 | 12 | 15 | 14 | 11 | 9 | 17 | 15 |
| VI ACCESSORIES* | 14 | 15 | 14 | 15 | 12 | 17 | 11 | 17 | 10 | 10 |
| Iron and Steel | 15 | 12 | 13 | 16 | 10 | 17 | 13 | 18 | 10 | 15 |
| Other Metals | 12 | 4 | 10 | 14 | 0 | 12 | 23 | 8 | 13 | 2 |
| Appliances | 12 | 19 | 13 | 12 | 12 | 16 | 7 | 15 | 10 | 8 |
| Glass and Tile | 17 | 19 | 20 | 14 | 16 | 21 | 13 | 15 | 10 | 10 |
| NEW ENGLAND | | | | | | | | | | |
| ALL COMMODITIES | 10% | 10% | 9% | 12% | 11% | 11% | 8% | 13% | 12% | 9% |
| I ROUGH MATERIAL* | 10 | 6 | - | 7 | 15 | - | - | - | - | - |
| Sand, Stone and Gravel | 10 | 6 | - | 7 | 15 | - | - | - | - | - |
| II RAW MATERIAL* | 8 | 7 | 8 | 9 | 13 | 4 | 7 | 13 | 12 | 9 |
| Bulk Grain and Beets | 32 | 32 | - | - | - | - | - | - | - | - |
| Perishables | 7 | 2 | 7 | 11 | 6 | 4 | 7 | 13 | 12 | 9 |
| Live Animals | 5 | 7 | 1 | - | - | - | 0 | - | - | - |
| Coal and Coke | 15 | 15 | 0 | - | - | - | - | - | - | - |
| Ores | 6 | 14 | 3 | - | - | - | - | - | - | - |
| Sulphur & Sulphuric Acid | 5 | 5 | - | - | - | - | - | - | - | - |
| Forest Products | 9 | 8 | 9 | 7 | 31 | 0 | - | - | - | - |
| III SEMI-PROCESSED MATERIAL* | 11 | 6 | 7 | 16 | - | 18 | 0 | - | - | - |
| Cotton, Hay and Tobacco | 5 | 5 | - | 3 | - | - | - | - | - | - |
| Paper and Products | 11 | 6 | 7 | 16 | - | 18 | 0 | - | - | - |
| IV NECESSARIES* | 9 | 12 | 9 | 7 | 6 | - | - | - | - | - |
| Cereals | 13 | 15 | 1 | - | - | - | - | - | - | - |
| Miscellaneous Farm Products | 7 | 9 | 0 | - | - | - | - | - | - | - |
| Edible Animal Products | 14 | 10 | 27 | - | - | - | - | - | - | - |
| Oils, Vegetable and Animal | 3 | 0 | 3 | - | - | - | - | - | - | - |
| Manufactured Food | 10 | 12 | 15 | 8 | 6 | - | - | - | - | - |
| Textiles and Leather | 7 | 6 | 7 | 8 | - | - | - | - | - | - |
| V AUXILIARIES* | 14 | 14 | 16 | 16 | - | - | 0 | - | - | - |
| Petroleum and Products | 16 | 15 | 25 | - | - | - | - | - | - | - |
| Building Materials | 11 | 18 | 11 | 0 | - | - | - | - | - | - |
| Chemicals | 6 | 13 | - | 0 | - | - | 0 | - | - | - |
| Miscellaneous | 14 | 9 | 15 | 19 | - | 11 | 0 | - | - | - |
| VI ACCESSORIES* | 12 | 8 | 10 | 15 | 10 | - | 20 | - | - | - |
| Iron and Steel | 15 | 8 | 12 | 19 | 7 | - | 26 | - | - | - |
| Other Metals | 6 | 5 | 13 | 0 | - | - | - | - | - | - |
| Appliances | 9 | 29 | 3 | 4 | 10 | - | - | - | - | - |
| Glass and Tile | 5 | 1 | 0 | - | - | - | 8 | - | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.



SECTION 71. DIRECTNESS

Analysis 71.3 Directness of Rail Service - Commodity Summary of Carloads (Terminated December 13, 1933) Originated in Trunk Line and Central Territories

| ORIGIN TERRITORY COMMODITY GROUP | AVERAGE DEGREE OF CIRCUITY — DESTINATION TERRITORIES: UNITED STATES | NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| TRUNK LINE | | | | | | | | | | |
| ALL COMMODITIES | 11% | 12% | 10% | 12% | 16% | 13% | 11% | 16% | 13% | 17% |
| I ROUGH MATERIAL* | 11 | 83 | 9 | 11 | 0 | 21 | - | - | - | - |
| Sand, Stone and Gravel | 11 | 83 | 9 | 11 | 0 | 21 | - | - | - | - |
| II RAW MATERIAL* | 10 | 8 | 9 | 11 | 13 | 12 | 7 | 12 | 5 | - |
| Bulk Grain and Beets | 3 | 14 | 2 | 0 | 25 | 1 | - | - | - | - |
| Perishables | 9 | 5 | 8 | 9 | 13 | 14 | 7 | 11 | 5 | - |
| Live Animals | 14 | 10 | 21 | 12 | 1 | 3 | - | - | - | - |
| Coal and Coke | 10 | 8 | 10 | 12 | 22 | - | - | - | - | - |
| Ores | 9 | 13 | 4 | 9 | - | 19 | - | - | - | - |
| Sulphur & Sulphuric Acid | 7 | 0 | 5 | 7 | 9 | 15 | - | - | - | - |
| Forest Products | 14 | 12 | 14 | 14 | 6 | 3 | - | 24 | - | - |
| III SEMI-PROCESSED MATERIAL* | 14 | 13 | 11 | 9 | 33 | 24 | 26 | 7 | 8 | - |
| Cotton, Hay and Tobacco | 15 | 15 | 10 | 0 | 42 | 29 | 40 | - | - | - |
| Paper and Products | 14 | 10 | 11 | 9 | 31 | 22 | 25 | 7 | 8 | - |
| IV NECESSARIES* | 11 | 19 | 8 | 11 | 22 | 12 | 8 | - | - | 11 |
| Cereals | 11 | 19 | 8 | 16 | 17 | 15 | - | - | - | - |
| Miscellaneous Farm Products | 8 | 23 | 5 | 8 | 11 | 5 | 8 | - | - | 14 |
| Edible Animal Products | 16 | 20 | 8 | 0 | 71 | 13 | - | - | - | - |
| Oils, Vegetable & Animal | 12 | 10 | 11 | 14 | - | 4 | - | - | - | 8 |
| Manufactured Food | 11 | 23 | 9 | 12 | 12 | 5 | 7 | - | - | 11 |
| Textiles and Leather | 13 | 5 | 5 | 6 | 6 | 26 | - | - | - | - |
| V AUXILIARIES* | 14 | 24 | 13 | 13 | 14 | 12 | 9 | 8 | 16 | 20 |
| Petroleum and Products | 14 | 16 | 15 | 15 | 5 | 12 | 4 | 11 | 0 | - |
| Building Materials | 12 | 8 | 14 | 9 | 15 | 16 | 13 | - | - | - |
| Chemicals | 12 | 5 | 12 | 8 | 29 | 5 | 15 | 10 | - | 19 |
| Miscellaneous | 15 | 38 | 7 | 14 | 16 | 19 | 11 | 6 | 21 | 21 |
| VI ACCESSORIES* | 14 | 14 | 12 | 12 | 15 | 13 | 8 | 23 | - | 18 |
| Iron and Steel | 14 | 13 | 11 | 12 | 12 | 16 | 9 | 25 | - | 18 |
| Other Metals | 7 | - | 7 | 6 | - | - | - | - | - | - |
| Appliances | 12 | 17 | 9 | 12 | 18 | 11 | 16 | 18 | - | - |
| Glass and Tile | 19 | 19 | 28 | 10 | 24 | 14 | 4 | - | - | 16 |
| CENTRAL | | | | | | | | | | |
| ALL COMMODITIES | 12% | 13% | 12% | 11% | 12% | 15% | 11% | 16% | 11% | 11% |
| I ROUGH MATERIAL* | 9 | 10 | 15 | 7 | 6 | 2 | 10 | - | - | - |
| Sand, Stone and Gravel | 9 | 10 | 15 | 7 | 6 | 2 | 10 | - | - | - |
| II RAW MATERIAL* | 10 | 10 | 10 | 10 | 8 | 12 | 12 | 12 | 6 | 2 |
| Bulk Grain and Beets | 12 | 11 | 11 | 15 | 20 | 8 | 9 | 88 | - | - |
| Perishables | 13 | 14 | 15 | 12 | 12 | 17 | 7 | - | - | - |
| Live Animals | 8 | 7 | 9 | 6 | 10 | 22 | 4 | 11 | 8 | 2 |
| Coal and Coke | 10 | - | 22 | 10 | 2 | 0 | 12 | 14 | 2 | - |
| Ores | 12 | 6 | 12 | 20 | 1 | - | 3 | 0 | - | - |
| Sulphur & Sulphuric Acid | 20 | - | 4 | 30 | 13 | 24 | 16 | - | - | - |
| Forest Products | 12 | 20 | 7 | 14 | 5 | 12 | 13 | - | - | - |
| III SEMI-PROCESSED MATERIAL* | 15 | 16 | 14 | 16 | 14 | 14 | 11 | 28 | - | 33 |
| Cotton, Hay and Tobacco | 14 | 15 | 10 | 23 | 13 | 14 | 8 | - | - | - |
| Paper and Products | 15 | 18 | 15 | 14 | 16 | 14 | 11 | 28 | - | 33 |
| IV NECESSARIES* | 12 | 13 | 12 | 11 | 12 | 12 | 12 | 15 | 11 | 12 |
| Cereals | 12 | 10 | 12 | 15 | 13 | 12 | 13 | - | 0 | 14 |
| Miscellaneous Farm Products | 13 | 25 | 13 | 7 | 11 | 16 | 8 | 11 | - | - |
| Edible Animal Products | 11 | 10 | 12 | 11 | 12 | 10 | 0 | 17 | - | 15 |
| Oils, Vegetable and Animal | 14 | - | 22 | 6 | 0 | 17 | 13 | - | - | - |
| Manufactured Food | 13 | 36 | 11 | 10 | 11 | 14 | 15 | 14 | 10 | |
| Textiles and Leather | 7 | 4 | 4 | 5 | - | 16 | 6 | - | - | - |
| V AUXILIARIES* | 15 | 18 | 15 | 14 | 17 | 21 | 13 | 17 | 14 | 18 |
| Petroleum and Products | 14 | - | 10 | 14 | 16 | 18 | 12 | 17 | - | - |
| Building Materials | 19 | 30 | 19 | 17 | 11 | 23 | 8 | 17 | - | - |
| Chemicals | 11 | 9 | 10 | 11 | 9 | 18 | 10 | 20 | 5 | 9 |
| Miscellaneous | 15 | 18 | 15 | 11 | 20 | 22 | 10 | 15 | 18 | 18 |
| VI ACCESSORIES* | 13 | 13 | 14 | 15 | 12 | 18 | 10 | 15 | 10 | 9 |
| Iron and Steel | 14 | 13 | 14 | 17 | 9 | 16 | 13 | 14 | 5 | 15 |
| Other Metals | 14 | - | 10 | 2 | - | 12 | 40 | - | 20 | - |
| Appliances | 11 | 9 | 13 | 13 | 15 | 19 | 6 | 17 | 10 | 8 |
| Glass and Tile | 16 | 18 | 16 | 15 | 17 | 34 | 22 | 14 | - | 4 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.

SECTION 71. DIRECTNESS

Analysis 71.4 Directness of Rail Service - Commodity Summary of Carloads (Terminated December 13, 1933) Originated in Pocahontas and Southern Territories

| ORIGIN TERRITORY / COMMODITY GROUP | AVERAGE DEGREE OF CIRCUITY — DESTINATION TERRITORIES: UNITED STATES | NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| POCAHONTAS | | | | | | | | | | |
| ALL COMMODITIES | 9% | 12% | 12% | 8% | 5% | 12% | 13% | 18% | 5% | - |
| I ROUGH MATERIAL* | 6 | - | 2 | 4 | 14 | 0 | - | - | - | - |
| Sand, Stone and Gravel | 6 | - | 2 | 4 | 14 | 0 | - | - | - | - |
| II RAW MATERIAL* | 8 | 8 | 11 | 8 | 4 | 10 | 13 | 5 | 5 | - |
| Bulk Grain and Beets | 6 | - | - | - | - | 0 | 9 | - | - | - |
| Perishables | 7 | 0 | 4 | 7 | 25 | 12 | - | 0 | - | - |
| Live Animals | 2 | - | 2 | - | 17 | - | 0 | - | - | - |
| Coal and Coke | 8 | 9 | 11 | 8 | 4 | 10 | 13 | 7 | 5 | - |
| Ores | 8 | - | 12 | - | 6 | 6 | - | - | - | - |
| Sulphur and Sulphuric Acid | 1 | - | 0 | - | 2 | 0 | - | - | - | - |
| Forest Products | 12 | 6 | 15 | 6 | 10 | 40 | - | - | - | - |
| III SEMIPROCESSED MATERIAL* | 13 | - | 14 | 2 | 9 | 16 | 10 | 84 | - | - |
| Cotton, Hay and Tobacco | 13 | - | 39 | - | 9 | 17 | - | - | - | - |
| Paper and Products | 13 | - | 7 | 2 | 10 | 15 | 10 | 84 | - | - |
| IV NECESSARIES* | 14 | 70 | 8 | 9 | 10 | 16 | 8 | - | - | - |
| Cereals | 21 | - | - | 4 | 20 | 26 | - | - | - | - |
| Miscellaneous Farm Products | 9 | - | 9 | 13 | 2 | 4 | 8 | - | - | - |
| Edible Animal Products | 53 | 27 | 9 | - | - | 0 | - | - | - | - |
| Oils, Vegetable and Animal | 21 | - | 9 | - | 4 | 34 | - | - | - | - |
| Manufactured Food | 11 | 22 | 0 | 3 | 0 | 15 | - | - | - | - |
| Textiles and Leather | 6 | - | - | 0 | 0 | 9 | - | - | - | - |
| V AUXILIARIES* | 15 | 7 | 19 | 11 | 11 | 16 | 16 | 18 | - | - |
| Petroleum and Products | 16 | 13 | 15 | 21 | 10 | 18 | 29 | - | - | - |
| Building Materials | 20 | - | 3 | 0 | 20 | 49 | - | - | - | - |
| Chemicals | 18 | - | 27 | 13 | 0 | 8 | 23 | 18 | - | - |
| Miscellaneous | 12 | 5 | 20 | 4 | 3 | 8 | 12 | - | - | - |
| VI ACCESSORIES* | 14 | 18 | 19 | 9 | 9 | 14 | 8 | 9 | - | - |
| Iron and Steel | 12 | 5 | 15 | 3 | 11 | 19 | 5 | - | - | - |
| Other Metals | 23 | - | 30 | 10 | - | - | - | - | - | - |
| Appliances | 9 | - | 18 | 6 | 0 | - | 9 | - | - | - |
| Glass and Tile | 16 | 22 | 22 | 18 | 9 | 7 | 8 | 9 | - | - |
| SOUTHEASTERN | | | | | | | | | | |
| ALL COMMODITIES | 11% | 10% | 12% | 10% | 13% | 11% | 12% | 17% | 2% | 13% |
| I ROUGH MATERIAL* | 9 | 17 | 9 | 5 | 11 | 9 | - | 16 | - | - |
| Sand, Stone and Gravel | 9 | 17 | 9 | 5 | 11 | 9 | - | 16 | - | - |
| II RAW MATERIAL* | 10 | 5 | 10 | 9 | 8 | 10 | 12 | 20 | 2 | - |
| Bulk Grain and Beets | 8 | - | 27 | - | 0 | 7 | - | - | - | - |
| Perishables | 9 | 3 | 6 | 7 | 10 | 13 | 13 | 22 | - | - |
| Live Animals | 7 | 3 | 14 | 3 | 0 | 4 | 13 | - | - | - |
| Coal and Coke | 9 | - | 48 | 8 | 5 | 8 | 10 | 20 | 2 | - |
| Ores | 7 | - | 15 | 18 | - | 4 | 1 | - | 0 | - |
| Sulphur and Sulphuric Acid | 11 | - | 5 | 8 | 0 | 11 | 15 | 4 | - | - |
| Forest Products | 13 | 9 | 14 | 15 | 17 | 11 | 18 | 15 | 3 | - |
| III SEMIPROCESSED MATERIAL* | 15 | 15 | 16 | 10 | 18 | 15 | 25 | 22 | - | - |
| Cotton, Hay and Tobacco | 15 | 15 | 14 | 10 | 20 | 15 | 7 | - | - | - |
| Paper and Products | 16 | 13 | 20 | 10 | 4 | 15 | 36 | 22 | - | - |
| IV NECESSARIES* | 13 | 17 | 14 | 12 | 26 | 12 | 10 | 16 | 3 | - |
| Cereals | 11 | - | 13 | 43 | 6 | 10 | - | 17 | - | - |
| Miscellaneous Farm Products | 13 | - | 5 | 8 | 45 | 13 | 19 | - | - | - |
| Edible Animal Products | 11 | 18 | 15 | - | 3 | 8 | - | 24 | - | - |
| Oils, Vegetable and Animal | 17 | - | 21 | 14 | 24 | 14 | 8 | 40 | - | - |
| Manufactured Food | 13 | - | 26 | 13 | 3 | 12 | 8 | 13 | - | 24 |
| Textiles and Leather | 13 | 17 | 18 | 17 | 12 | 9 | 11 | 0 | 3 | 11 |
| V AUXILIARIES* | 14 | 15 | 16 | 13 | 11 | 15 | 11 | 13 | - | 9 |
| Petroleum and Products | 16 | - | 21 | 9 | 0 | 17 | 11 | 10 | - | - |
| Building Materials | 11 | 24 | 6 | 11 | 4 | 9 | - | 25 | - | - |
| Chemicals | 12 | 7 | 28 | 11 | - | 8 | 6 | 18 | - | - |
| Miscellaneous | 13 | 14 | 15 | 17 | 14 | 11 | 13 | 10 | - | 9 |
| VI ACCESSORIES* | 19 | 22 | 19 | 30 | 13 | 17 | 16 | 17 | - | - |
| Iron and Steel | 19 | 14 | 24 | 33 | 0 | 17 | 15 | 17 | - | - |
| Other Metals | 2 | - | 3 | - | 0 | - | - | - | - | - |
| Appliances | 18 | 34 | 19 | 6 | 23 | 15 | 19 | 18 | - | - |
| Glass and Tile | 17 | - | 1 | - | - | 29 | - | 0 | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.



SECTION 71. DIRECTNESS

ANALYSIS 71.5 Directness of Rail Service - Commodity Summary of Carloads (Terminated December 13, 1933) Originated in Western Trunk Line and Southwestern Territories

| ORIGIN TERRITORY / COMMODITY GROUP | AVERAGE DEGREE OF CIRCUITY — DESTINATION TERRITORIES: UNITED STATES | NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| WESTERN TRUNK LINE | | | | | | | | | | |
| ALL COMMODITIES | 10% | 10% | 10% | 8% | 11% | 13% | 9% | 17% | 9% | 11% |
| I ROUGH MATERIAL* | 32 | - | 12 | 5 | - | - | 38 | 34 | - | - |
| Sand, Stone and Gravel | 32 | - | 12 | 5 | - | - | 38 | 34 | - | - |
| II RAW MATERIAL* | 7 | 11 | 15 | 7 | 11 | 10 | 8 | 23 | 6 | 10 |
| Bulk Grain and Beets | 9 | - | 0 | 10 | 20 | 5 | 8 | 20 | 5 | 14 |
| Perishables | 19 | 18 | 10 | 19 | 7 | 15 | 12 | 25 | - | - |
| Live Animals | 7 | 9 | 13 | 4 | 10 | 5 | 7 | 0 | 8 | 9 |
| Coal and Coke | 8 | - | 24 | 16 | - | - | 8 | 14 | 9 | 5 |
| Ores | 11 | - | 8 | 15 | - | 6 | 2 | 0 | - | - |
| Sulphur and Sulphuric Acid | 5 | - | - | 0 | 6 | - | 13 | - | 1 | 10 |
| Forest Products | 12 | - | 23 | 9 | 6 | 9 | 9 | 22 | - | 6 |
| III SEMI-PROCESSED MATERIAL* | 10 | 0 | 14 | 6 | 8 | 9 | 9 | 33 | 10 | 11 |
| Cotton, Hay and Tobacco | 10 | 0 | - | 9 | - | 10 | 9 | 55 | 8 | - |
| Paper and Products | 10 | 0 | 14 | 6 | 8 | 8 | 14 | 21 | 11 | 11 |
| IV NECESSARIES* | 10 | 9 | 9 | 9 | 11 | 13 | 9 | 13 | 13 | 13 |
| Cereals | 13 | 8 | 11 | 15 | 17 | 13 | 10 | 12 | 8 | 16 |
| Miscellaneous Farm Products | 11 | 0 | 14 | 4 | - | 17 | 10 | 14 | - | - |
| Edible Animal Products | 9 | 10 | 9 | 5 | 7 | 13 | 7 | 13 | 25 | 11 |
| Oils, Vegetable and Animal | 12 | - | - | 1 | - | 31 | 5 | - | 1 | - |
| Manufactured Food | 11 | 6 | 7 | 14 | 14 | 11 | 7 | 15 | 0 | 20 |
| Textiles and Leather | 10 | 4 | - | 2 | - | 14 | 13 | 15 | - | - |
| V AUXILIARIES* | 13 | 8 | 16 | 12 | 12 | 6 | 13 | 13 | 9 | 9 |
| Petroleum and Products | 13 | - | 25 | 14 | - | 21 | 13 | 14 | - | 7 |
| Building Materials | 13 | - | 13 | 18 | - | 4 | 13 | 17 | 16 | - |
| Chemicals | 15 | - | 0 | 0 | - | - | 32 | - | - | 0 |
| Miscellaneous | 10 | 8 | 16 | 10 | 12 | 15 | 11 | 6 | 1 | 10 |
| VI ACCESSORIES* | 13 | 30 | 12 | 14 | 17 | 18 | 7 | 13 | 12 | 9 |
| Iron and Steel | 12 | - | 22 | 35 | - | 14 | 10 | 18 | 11 | 5 |
| Other Metals | 6 | 3 | 7 | 15 | - | - | 4 | 0 | - | - |
| Appliances | 14 | 37 | 12 | 7 | 17 | - | 7 | 11 | 17 | 13 |
| Glass and Tile | 18 | - | - | 0 | - | 22 | - | 0 | - | - |
| SOUTHWESTERN | | | | | | | | | | |
| ALL COMMODITIES | 14% | 14% | 13% | 14% | 23% | 12% | 18% | 13% | 15% | 5% |
| I ROUGH MATERIAL* | 11 | - | 11 | 15 | - | 28 | 0 | 11 | - | 6 |
| Sand, Stone and Gravel | 11 | - | 11 | 15 | - | 28 | 0 | 11 | - | 6 |
| II RAW MATERIAL* | 12 | 20 | 13 | 8 | 7 | 11 | 13 | 14 | 9 | 4 |
| Bulk Grain and Beets | 16 | - | 15 | 2 | - | 18 | 26 | 17 | - | 11 |
| Perishables | 11 | 20 | 11 | 5 | - | 42 | 18 | 8 | 9 | - |
| Live Animals | 8 | - | 11 | 13 | - | 6 | 10 | 7 | - | 0 |
| Coal and Coke | 14 | - | - | - | - | - | 15 | 12 | - | 10 |
| Ores | 18 | - | 13 | 38 | - | 46 | 13 | 24 | - | 0 |
| Sulphur and Sulphuric Acid | 14 | - | - | 0 | - | - | 11 | 22 | 8 | - |
| Forest Products | 14 | - | 19 | 12 | 7 | 7 | 7 | 13 | 16 | 0 |
| III SEMI-PROCESSED MATERIAL* | 14 | 11 | 30 | 10 | - | 18 | 24 | 12 | - | - |
| Cotton, Hay and Tobacco | 14 | 11 | 30 | 2 | - | 20 | 30 | 12 | - | - |
| Paper and Products | 12 | - | - | 21 | - | 1 | 0 | 15 | - | - |
| IV NECESSARIES* | 14 | 3 | 13 | 10 | 27 | 7 | 14 | 17 | 21 | 13 |
| Cereals | 17 | - | - | 1 | - | 11 | 45 | 18 | - | - |
| Miscellaneous Farm Products | 15 | 0 | 19 | 8 | 29 | 0 | 11 | 8 | - | - |
| Edible Animal Products | 11 | 5 | 14 | 11 | 5 | 11 | 3 | 9 | - | 0 |
| Oils, Vegetable and Animal | 16 | - | - | 9 | - | 3 | 16 | 17 | 21 | 18 |
| Manufactured Food | 11 | - | 8 | 11 | - | 4 | 11 | 20 | - | - |
| Textiles and Leather | 13 | - | - | - | - | 10 | 9 | 18 | - | - |
| V AUXILIARIES* | 16 | 8 | 16 | 18 | 5 | 12 | 22 | 10 | 30 | 8 |
| Petroleum and Products | 16 | 8 | 16 | 18 | 5 | 12 | 22 | 10 | - | 9 |
| Building Materials | 17 | - | - | 85 | - | 17 | 19 | 12 | - | 19 |
| Chemicals | 10 | - | - | 4 | - | 18 | 15 | 29 | 30 | 3 |
| Miscellaneous | 12 | - | - | 14 | - | 13 | 19 | 6 | - | - |
| VI ACCESSORIES* | 19 | - | - | 20 | - | 15 | 13 | 23 | - | 0 |
| Iron and Steel | 23 | - | - | 23 | - | 21 | 14 | 28 | - | - |
| Other Metals | 12 | - | - | 12 | - | - | 31 | 13 | - | - |
| Appliances | 15 | - | - | 30 | 17 | - | 14 | 8 | - | 0 |
| Glass and Tile | 17 | - | - | 5 | 12 | 28 | 0 | 39 | - | - |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls.

SECTION 71. DIRECTNESS

Analysis 71.6 Directness of Rail Service - Commodity Summary of Carloads (Terminated December 13, 1933) Originated in Pacific Northwest and Pacific Southwest Territories

| ORIGIN TERRITORY<br>COMMODITY GROUP | AVERAGE DEGREE OF CIRCUITY<br>DESTINATION TERRITORIES<br>UNITED STATES | NEW ENGLAND | TRUNK LINE | CENTRAL | POCAHONTAS | SOUTHEASTERN | WESTERN TRUNK LINE | SOUTHWESTERN | PACIFIC NORTHWEST | PACIFIC SOUTHWEST |
|---|---|---|---|---|---|---|---|---|---|---|
| PACIFIC NORTHWEST | | | | | | | | | | |
| ALL COMMODITIES | 8% | 27% | 11% | 10% | 0% | 11% | 6% | 10% | 4% | 4% |
| I ROUGH MATERIAL* | 0 | - | - | - | - | - | 0 | - | 0 | 0 |
| Sand, Stone and Gravel | 0 | - | - | - | - | - | 0 | - | 0 | 0 |
| II RAW MATERIAL* | 7 | 27 | 12 | 8 | 0 | 12 | 7 | 10 | 4 | 4 |
| Bulk Grain and Beets | 5 | - | - | 26 | - | - | 1 | - | 5 | 0 |
| Perishables | 7 | - | 7 | 7 | 0 | 11 | 5 | 11 | 1 | 4 |
| Live Animals | 4 | - | 12 | 8 | - | - | 1 | 0 | 2 | 4 |
| Coal and Coke | 5 | - | - | - | - | - | 5 | - | 5 | 4 |
| Ores | 5 | - | - | 13 | - | - | 2 | - | 2 | - |
| Sulphur and Sulphuric Acid | 6 | - | 6 | - | - | - | - | - | - | - |
| Forest Products | 10 | 27 | 21 | 7 | - | 14 | 10 | 8 | 2 | 4 |
| III SEMIPROCESSED MATERIAL* | 8 | - | - | 10 | - | - | 5 | 12 | 4 | 0 |
| Cotton, Hay and Tobacco | 4 | - | - | - | - | - | 2 | - | 5 | 0 |
| Paper and Products | 9 | - | - | 10 | - | - | 5 | 12 | 0 | - |
| IV NECESSARIES* | 11 | - | 8 | 30 | - | 1 | 7 | 9 | 8 | 6 |
| Cereals | 10 | - | - | 17 | - | 1 | 10 | - | 9 | - |
| Miscellaneous Farm Products | 15 | - | 11 | 39 | - | - | 6 | 14 | 1 | 15 |
| Edible Animal Products | 12 | - | 7 | 40 | - | - | - | - | 6 | 5 |
| Oils, Vegetable & Animal | 11 | - | 13 | 9 | - | - | - | - | 4 | - |
| Manufactured Food | 6 | - | 1 | - | - | - | 7 | 4 | 9 | 1 |
| Textiles and Leathers | 0 | - | - | - | - | - | - | - | 0 | - |
| V AUXILIARIES* | 6 | - | - | 11 | - | - | 6 | 11 | 4 | 0 |
| Petroleum and Products | 5 | - | - | 6 | - | - | 6 | - | 4 | 0 |
| Building Materials | 7 | - | - | - | - | - | - | 11 | 3 | 0 |
| Chemicals | 14 | - | - | - | - | - | - | - | 14 | - |
| Miscellaneous | 8 | - | - | 12 | - | - | 0 | - | 7 | 0 |
| VI ACCESSORIES* | 9 | - | - | 19 | - | - | 9 | - | 8 | 0 |
| Iron and Steel | 9 | - | - | - | - | - | 0 | - | 14 | - |
| Other Metals | 22 | - | - | 30 | - | - | - | - | 2 | - |
| Appliances | 4 | - | - | 0 | - | - | 12 | - | 0 | 0 |
| Glass and Tile | 9 | - | - | - | - | - | 0 | - | 10 | - |
| PACIFIC SOUTHWEST | | | | | | | | | | |
| ALL COMMODITIES | 9% | 11% | 9% | 11% | 9% | 7% | 9% | 8% | 11% | 8% |
| I ROUGH MATERIAL* | 4 | - | - | - | - | - | - | - | - | 4 |
| Sand, Stone and Gravel | 4 | - | - | - | - | - | - | - | - | 4 |
| II RAW MATERIAL* | 9 | 11 | 9 | 9 | 9 | 7 | 8 | 9 | 12 | 7 |
| Bulk Grain and Beets | 11 | - | 9 | 13 | - | - | 0 | - | - | 10 |
| Perishables | 9 | 11 | 9 | 9 | 9 | 6 | 8 | 9 | 8 | 11 |
| Live Animals | 7 | - | 6 | 11 | - | - | 10 | - | 16 | 7 |
| Coal and Coke | 9 | - | - | - | - | - | 8 | 12 | 14 | 6 |
| Ores | 6 | - | - | - | - | - | 79 | 0 | - | 4 |
| Sulphur and Sulphuric Acid | 12 | - | - | - | - | - | - | 0 | - | 26 |
| Forest Products | 7 | 6 | 4 | 8 | - | 16 | 7 | - | 0 | 5 |
| III SEMIPROCESSED MATERIAL* | 15 | - | - | 30 | - | - | 0 | - | 0 | 11 |
| Cotton, Hay and Tobacco | 16 | - | - | 30 | - | - | 0 | - | 0 | 11 |
| Paper and Products | 9 | - | - | - | - | - | - | - | - | 9 |
| IV NECESSARIES* | 14 | - | 13 | 16 | - | 12 | 17 | 10 | 6 | 10 |
| Cereals | 21 | - | - | 30 | - | 14 | - | - | 0 | 25 |
| Miscellaneous Farm Products | 13 | - | 19 | 13 | - | 4 | 14 | 4 | 0 | 10 |
| Edible Animal Products | 9 | - | 8 | - | - | - | - | - | - | 19 |
| Oils, Vegetable and Animal | 23 | - | - | 25 | - | - | 29 | - | - | 7 |
| Manufactured Food | 11 | - | 2 | 17 | - | 14 | 10 | 12 | 7 | 6 |
| Textiles and Leather | 7 | - | - | - | - | - | - | 7 | - | - |
| V AUXILLIARIES* | 9 | - | - | 13 | - | - | 1 | 10 | 7 | 9 |
| Petroleum and Products | 8 | - | - | 18 | - | - | 0 | 1 | 0 | 7 |
| Building Materials | 13 | - | - | - | - | - | 21 | 23 | - | 12 |
| Chemicals | 6 | - | - | 8 | - | - | - | - | 6 | 0 |
| Miscellaneous | 9 | - | - | 10 | - | - | 0 | - | - | 8 |
| VI ACCESSORIES* | 11 | - | - | 14 | - | - | - | 3 | 14 | 12 |
| Iron and Steel | 15 | - | - | 18 | - | - | - | 7 | 18 | 14 |
| Other Metals | 1 | - | - | - | - | - | - | 1 | - | 2 |
| Appliances | 4 | - | - | 9 | - | - | 0 | 3 | 4 | 4 |
| Glass and Tile | 11 | - | - | - | - | - | - | - | - | 11 |

* Where commodities of two groups have been combined, the total is placed under the group in which the predominant commodity falls. For reconciliation by primary commodities see Analysis 3.0.



SECTION 73. CAPITAL SERVICING

Analysis 73.1 Unit Cost of Providing a Return on Carrier Investment

| | COST OF ANNUAL CAPITAL SERVICE* AGGREGATE (000) | RATIO TO COST# | PER ROUTE MILE | PER SCHEDULE | PER VEHICLE | PER NET TON | PER SCHEDULE MILE | PER VEHICLE MILE | PER TON MILE GROSS | PER TON MILE NET | PER TON MILE EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RAIL - UNITED STATES | $916,062 | 46.60% | $3,773 | $172 | $34 | $1.42 | $2.34 | $.0887 | $.0012 | $.0039 | $.0020 |
| WATER- UNITED STATES | 17,868 | 13.59 | 68 | 158 | - | .38 | .71 | - | - | .0005 | - |
| PIPE - UNITED STATES | 38,197 | 38.00% | 412 | - | - | .46 | - | - | - | .0012 | - |
| RAILWAYS: | | | | | | | | | | | |
| New England | $26,412 | 33.23 | $3,460 | $106 | $20 | $1.89 | $2.13 | $.0726 | $.0012 | $.0044 | $.0023 |
| Central East | 354,188 | 39.50 | 5,910 | 152 | 33 | 1.30 | 2.44 | .0816 | .0011 | .0033 | .0017 |
| Pocahontas | 48,968 | 52.41 | 6,325 | 166 | 29 | .65 | 2.88 | .0877 | .0010 | .0023 | .0012 |
| Southeast | 114,168 | 53.32 | 3,276 | 180 | 27 | 1.34 | 2.13 | .0992 | .0014 | .0044 | .0023 |
| Northwest | 173,946 | 41.73 | 2,201 | 155 | 40 | 1.34 | 1.80 | .0744 | .0011 | .0038 | .0020 |
| Southwest | 198,680 | 74.89 | 3,704 | 280 | 41 | 1.82 | 3.01 | .1241 | .0018 | .0067 | .0035 |
| WATERWAYS: | | | | | | | | | | | |
| COMMON CARRIER (CARLOT) | $ 12,257 | 11.19 | $ 72 | $113 | - | $ .65 | $ .59 | - | - | $.0007 | - |
| Atlantic Coast | 2,457 | 10.51 | 110 | 172 | - | .53 | .43 | - | - | .0014 | - |
| Atlantic Gulf | 1,562 | 10.29 | 60 | 1,368 | - | .68 | .55 | - | - | .0006 | - |
| Intercoastal | 4,992 | 11.81 | 57 | 11,502 | - | 1.27 | .84 | - | - | .0005 | - |
| Inland Waters | 1,510 | 18.55 | 159 | 2,234 | - | .66 | 1.78 | - | - | .0010 | - |
| Great Lakes | 1,087 | 13.05 | 122 | 86 | - | .36 | .58 | - | - | .0010 | - |
| Pacific Coast | 649 | 5.29 | 46 | 8 | - | .25 | .18 | - | - | .0006 | - |
| OTHER CARRIERS (CARGO) | $ 5,611 | 25.59 | $ 60 | $1,420 | - | $ .20 | $1.26 | - | - | $.0003 | - |
| Atlantic Coast | 581 | 13.52 | 31 | 1,122 | - | .17 | 1.06 | - | - | .0003 | - |
| Atlantic Gulf | 314 | 31.59 | 34 | 8,263 | - | .60 | 1.95 | - | - | .0003 | - |
| Intercoastal | 70 | 22.08 | 11 | 4,375 | - | 1.45 | .36 | - | - | .0005 | - |
| Inland Waters | 74 | 15.68 | 18 | 322 | - | .13 | .30 | - | - | .0002 | - |
| Great Lakes | 4,487 | 29.75 | 91 | 2,058 | - | .19 | 1.56 | - | - | .0003 | - |
| Pacific Coast | 85 | 11.10 | 15 | 88 | - | .53 | .19 | - | - | .0013 | - |
| PIPE LINES: | | | | | | | | | | | |
| North Atlantic Coast | $ 2,742 | 41.19% | $ 186 | - | - | $ .97 | - | - | - | $.0026 | - |
| Great Lakes - Southwest | 15,960 | 33.39% | 355 | - | - | .64 | - | - | - | .0008 | - |
| Southwest Gulf | 19,495 | 42.33% | 591 | - | - | .36 | - | - | - | .0021 | - |

* Five per cent upon the book investment of the carrier.

# Operating expenses plus taxes.

SECTION 75. FUNCTION COSTS

Analysis 75.1 Carrier Function Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | NET RAIL | NET WATER | EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RAIL** | | | | | | | | | | | | | |
| Total Costs | $1,965,979 | 77% | $8,096 | 369 | $72.42 | $3.04 | $80.55 | $ 5.03 | $.1903 | $.0026 | $.0083 | - | $.0043 |
| Maintenance | 785,184 | 31 | 3,234 | 147 | 28.92 | 1.22 | 32.17 | 2.01 | .0760 | .0011 | .0033 | - | .0017 |
| Transportation | 809,406 | 32 | 3,333 | 152 | 29.82 | 1.25 | 33.16 | 2.07 | .0784 | .0011 | .0034 | - | .0018 |
| Overhead | 371,390 | 14 | 1,529 | 70 | 13.68 | .57 | 15.22 | .95 | .0359 | .0005 | .0016 | - | .0008 |
| **WATER** | | | | | | | | | | | | | |
| **CARLOT** | | | | | | | | | | | | | |
| Total Costs | $ 109,540 | 107% | $ 640 | $1,006 | | - | $5.84 | $38.97 | $ 5.30 | - | - | $.0060 | $.0034 | - |
| Maintenance | 18,524 | 18 | 108 | 170 | | - | .99 | 6.59 | .90 | - | - | .0010 | .0006 | - |
| Transportation | 63,852 | 62 | 373 | 587 | | - | 3.40 | 22.71 | 3.09 | - | - | .0035 | .0019 | - |
| Overhead | 27,164 | 27 | 159 | 250 | | - | 1.45 | 9.66 | 1.31 | - | - | .0015 | .0008 | - |
| **CARGO** | | | | | | | | | | | | | |
| Total Costs | $ 21,929 | 127% | $ 236 | $5,549 | | - | $ .77 | $30.50 | $ 4.91 | - | - | $.0012 | $.0011 | - |
| Maintenance | 3,652 | 21 | 39 | 925 | | - | .13 | 5.08 | .82 | - | - | .0002 | .0002 | - |
| Transportation | 15,157 | 88 | 163 | 3,835 | | - | .53 | 21.08 | 3.39 | - | - | .0008 | .0008 | - |
| Overhead | 3,120 | 18 | 34 | 789 | | - | .11 | 4.34 | .70 | - | - | .0002 | .0002 | - |
| **PIPE** | | | | | | | | | | | | | |
| Total Costs | $ 101,965 | 48% | $1,099 | | | - | $1.23 | - | - | - | - | $.0032# | - | - |
| Maintenance | 48,355 | 23 | 521 | | | - | .58 | - | - | - | - | .0015 | - | - |
| Transportation | 27,901 | 13 | 301 | | | - | .34 | - | - | - | - | .0009 | - | - |
| Overhead | 25,709 | 12 | 277 | | | - | .31 | - | - | - | - | .0008 | - | - |

# Actual distance.



SECTION 75. FUNCTION COSTS

Analysis 75.2 Water Function Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | NET TON MILE RAIL | NET TON MILE WATER |
|---|---|---|---|---|---|---|---|---|---|
| **CARLOT** | | | | | | | | | |
| **TOTAL COSTS** | | | | | | | | | |
| United States | $ 109,540 | 107% | $ 640 | $ 1,006 | $ 5.84 | $ 38.97 | $ 5.30 | $ .0060 | $ .0034 |
| Atlantic Coast | 23,378 | 94 | 1,044 | 1,639 | 5.00 | 32.69 | 4.11 | .0132 | .0118 |
| Atlantic Gulf | 15,174 | 114 | 581 | 13,287 | 6.64 | 53.59 | 5.35 | .0056 | .0045 |
| Intercoastal | 42,257 | 109 | 480 | 97,365 | 10.79 | 52.59 | 7.15 | .0042 | .0018 |
| Inland Waters | 8,142 | 95 | 858 | 12,044 | 3.55 | 36.68 | 9.62 | .0055 | .0034 |
| Great Lakes | 8,331 | 113 | 761 | 660 | 2.78 | 35.38 | 4.42 | .0073 | .0065 |
| Pacific Coast | 12,258 | 130 | 869 | 154 | 4.73 | 22.21 | 3.48 | .0119 | .0127 |
| **MAINTENANCE** | | | | | | | | | |
| United States | $ 18,524 | 18% | $ 108 | $ 170 | $ .99 | $ 6.59 | $ .90 | $ .0010 | $ .0006 |
| Atlantic Coast | 4,467 | 18 | 200 | 313 | .95 | 6.25 | .79 | .0025 | .0022 |
| Atlantic Gulf | 4,141 | 31 | 158 | 3,626 | 1.81 | 44.62 | 1.46 | .0015 | .0012 |
| Intercoastal | 4,962 | 13 | 56 | 11,433 | 1.27 | 6.18 | .84 | .0005 | .0002 |
| Inland Waters | 2,068 | 24 | 218 | 3,058 | .90 | 9.32 | 2.44 | .0014 | .0009 |
| Great Lakes | 1,376 | 19 | 126 | 109 | .46 | 5.84 | .73 | .0012 | .0011 |
| Pacific Coast | 1,510 | 16 | 107 | 18 | .58 | 2.74 | .43 | .0015 | .0016 |
| **TRANSPORTATION** | | | | | | | | | |
| United States | $ 63,852 | 62% | $ 373 | $ 587 | $ 3.40 | $ 22.71 | $ 3.09 | $ .0035 | $ .0019 |
| Atlantic Coast | 14,471 | 58 | 646 | 1,014 | 3.09 | 20.24 | 2.54 | .0082 | .0073 |
| Atlantic Gulf | 8,714 | 66 | 333 | 7,630 | 3.81 | 30.77 | 3.07 | .0032 | .0026 |
| Intercoastal | 21,892 | 64 | 282 | 57,353 | 6.35 | 30.98 | 4.21 | .0025 | .0011 |
| Inland Waters | 4,697 | 55 | 495 | 6,948 | 2.05 | 21.16 | 5.55 | .0032 | .0020 |
| Great Lakes | 4,364 | 59 | 398 | 345 | 1.45 | 18.53 | 2.32 | .0038 | .0034 |
| Pacific Coast | 6,714 | 71 | 476 | 84 | 2.59 | 12.17 | 1.91 | .0065 | .0070 |
| **OVERHEAD** | | | | | | | | | |
| United States | $ 27,164 | 27% | $ 159 | $ 250 | $ 1.45 | $ 9.66 | $ 1.31 | $ .0015 | $ .0008 |
| Atlantic Coast | 4,439 | 18 | 198 | 311 | .95 | 6.21 | .78 | .0025 | .0022 |
| Atlantic Gulf | 2,319 | 17 | 89 | 2,030 | 1.01 | 8.19 | .82 | .0009 | .0007 |
| Intercoastal | 12,403 | 32 | 141 | 28,578 | 3.17 | 15.44 | 2.10 | .0012 | .0005 |
| Inland Waters | 1,377 | 16 | 145 | 2,037 | .60 | 6.20 | 1.63 | .0009 | .0006 |
| Great Lakes | 2,591 | 35 | 237 | 205 | .86 | 11.00 | 1.37 | .0023 | .0020 |
| Pacific Coast | 4,034 | 43 | 286 | 50 | 1.56 | 7.31 | 1.15 | .0039 | .0042 |
| **CARGO** | | | | | | | | | |
| **TOTAL COSTS** | | | | | | | | | |
| United States | $ 21,929 | 127% | $ 236 | $ 5,549 | $ .77 | $ 30.50 | $ 4.91 | $ .0012 | $ .0011 |
| Atlantic Coast | 4,296 | 131 | 232 | 829 | 1.27 | 47.42 | 7.84 | .0020 | .0020 |
| Atlantic Gulf | 994 | 81 | 109 | 26,168 | 1.92 | 31.47 | 6.17 | .0012 | .0010 |
| Intercoastal | 318 | 174 | 52 | 19,860 | 6.58 | 9.20 | 1.65 | .0023 | .0011 |
| Inland Waters | 472 | 47 | 115 | 2,053 | .81 | 6.95 | 1.92 | .0014 | .0007 |
| Great Lakes | 15,081 | 136 | 305 | 6,918 | .63 | 41.85 | 5.24 | .0010 | .0009 |
| Pacific Coast | 767 | 203 | 157 | 791 | 4.74 | 5.72 | 1.73 | .0116 | .0116 |
| **MAINTENANCE** | | | | | | | | | |
| United States | $ 3,652 | 21% | $ 39 | $ 925 | $ .13 | $ 5.08 | $ .82 | $ .0002 | $ .0002 |
| Atlantic Coast | 942 | 29 | 51 | 1,818 | .28 | 10.40 | 1.72 | .0004 | .0004 |
| Atlantic Gulf | 224 | 18 | 24 | 5,882 | .43 | 7.09 | 1.39 | .0003 | .0002 |
| Intercoastal | 87 | 48 | 14 | 5,462 | 1.81 | 2.52 | .45 | .0006 | .0003 |
| Inland Waters | 70 | 7 | 17 | 304 | .12 | 1.03 | .28 | .0002 | .0001 |
| Great Lakes | 2,270 | 20 | 46 | 1,041 | .10 | 6.30 | .80 | .0001 | .0001 |
| Pacific Coast | 59 | 16 | 11 | 60 | .36 | .44 | .13 | .0009 | .0009 |
| **TRANSPORTATION** | | | | | | | | | |
| United States | $ 15,157 | 88% | $ 163 | $ 3,835 | $ .53 | $ 21.08 | $ 3.39 | $ .0008 | $ .0008 |
| Atlantic Coast | 2,860 | 87 | 154 | 5,521 | .85 | 31.57 | 5.22 | .0013 | .0013 |
| Atlantic Gulf | 768 | 63 | 84 | 20,211 | 1.48 | 24.32 | 4.76 | .0009 | .0008 |
| Intercoastal | 197 | 108 | 32 | 12,316 | 4.08 | 5.70 | 1.02 | .0014 | .0007 |
| Inland Waters | 317 | 31 | 77 | 1,377 | .54 | 4.67 | 1.29 | .0009 | .0005 |
| Great Lakes | 10,403 | 94 | 210 | 4,772 | .44 | 28.87 | 3.62 | .0007 | .0007 |
| Pacific Coast | 612 | 162 | 110 | 631 | 3.79 | 4.56 | 1.38 | .0092 | .0092 |
| **OVERHEAD** | | | | | | | | | |
| United States | $ 3,120 | 18% | $ 34 | $ 789 | $ .11 | $ 4.34 | $ .70 | $ .0002 | $ .0002 |
| Atlantic Coast | 495 | 15 | 27 | 954 | .15 | 5.46 | .90 | .0002 | .0002 |
| Atlantic Gulf | 3 | 00 | 0 | 74 | .01 | .09 | .02 | .0000 | .0000 |
| Intercoastal | 33 | 18 | 5 | 2,081 | .69 | .95 | .17 | .0003 | .0001 |
| Inland Waters | 86 | 8 | 21 | 371 | .15 | 1.27 | .35 | .0003 | .0001 |
| Great Lakes | 2,408 | 22 | 49 | 1,104 | .10 | 6.68 | .84 | .0002 | .0001 |
| Pacific Coast | 96 | 25 | 17 | 99 | .59 | .72 | .22 | .0015 | .0015 |

## Analysis 75.3 Pipe Function Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | NET TON | NET TON MILE |
|---|---|---|---|---|---|
| **TOTAL COSTS** | | | | | |
| United States | $ 101,965 | 48% | $ 1,099 | $ 1.23 | $ .0032 |
| North Atlantic Coast | 6,757 | 73 | 459 | 2.39 | .0064 |
| Great Lakes Southwest | 48,485 | 48 | 1,083 | 1.93 | .0023 |
| Southwest Gulf | 46,723 | 46 | 1,404 | .85 | .0019 |
| **MAINTENANCE** | | | | | |
| United States | $ 48,355 | 23% | $ 522 | $ .58 | $ .0015 |
| North Atlantic Coast | 2,647 | 28 | 180 | .94 | .0025 |
| Great Lakes Southwest | 22,170 | 22 | 495 | .88 | .0011 |
| Southwest Gulf | 23,538 | 23 | 707 | .43 | .0025 |
| **TRANSPORTATION** | | | | | |
| United States | $ 27,901 | 13% | $ 301 | $ .33 | $ .0009 |
| North Atlantic Coast | 2,552 | 27 | 173 | .90 | .0024 |
| Great Lakes Southwest | 12,698 | 23 | 284 | .51 | .0006 |
| Southwest Gulf | 12,651 | 12 | 380 | .23 | .0013 |
| **OVERHEAD** | | | | | |
| United States | $ 25,709 | 12% | $ 277 | $ .31 | $ .0008 |
| North Atlantic Coast | 1,558 | 17 | 106 | .55 | .0015 |
| Great Lakes Southwest | 13,617 | 14 | 304 | .54 | .0006 |
| Southwest Gulf | 10,534 | 10 | 317 | .19 | .0011 |



## Analysis 75.4 Rail Function Unit Costs - 1932

| | AGGREGATE (MILLIONS) | PER-CENT OF TOTAL COST | PER ROUTE MILE | PER SCHEDULE | PER SCHEDULE HOUR | PER SCHEDULE MILE | PER * VEHICLE | PER VEHICLE MILE | PER * NET TON | PER TON MILE NET | PER TON MILE EQUATED | PER TON MILE GROSS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TOTAL COSTS** | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 1,966 | - | 8,096 | 368.64 | 80.55 | 5.03 | 72.42 | .1903 | 3.04 | .00834 | .00131 | .00263 |
| Eastern | 976 | - | 14,460 | 379.58 | 95.09 | 6.20 | 67.04 | .2084 | 2.69 | .00861 | .00145 | .00285 |
| Southern | 307 | - | 7,220 | 330.97 | 69.90 | 4.35 | 66.48 | .1799 | 2.32 | .00650 | .00336 | .00233 |
| Western | 682 | - | 5,142 | 372.40 | 70.84 | 4.19 | 78.74 | .1752 | 4.01 | .00911 | .00171 | .00251 |
| New England | 79 | - | 10,413 | 328.36 | 93.27 | 6.42 | 49.28 | .2297 | 3.07 | .01317 | .00681 | .00372 |
| Trunk Line | 431 | - | 19,998 | 341.62 | 101.88 | 7.31 | 70.68 | .2294 | 2.62 | .00834 | .00462 | .00308 |
| Central | 465 | - | 12,133 | 438.60 | 89.84 | 5.40 | 67.98 | .1893 | 2.69 | .00787 | .00407 | .00256 |
| Pocahontas | 93 | - | 12,063 | 316.49 | 71.73 | 5.49 | 55.62 | .1673 | 1.35 | .00439 | .00227 | .00187 |
| Southeastern | 214 | - | 6,144 | 337.70 | 69.12 | 3.99 | 72.66 | .1861 | 3.40 | .00823 | .00425 | .00262 |
| Western Trunk Line | 333 | - | 5,654 | 361.79 | 71.97 | 4.31 | 69.73 | .1845 | 3.60 | .00951 | .00492 | .00266 |
| Southwestern | 153 | - | 4,301 | 328.81 | 64.53 | 3.72 | 73.00 | .1700 | 3.56 | .00864 | .00447 | .00239 |
| Pacific Northwest | 83 | - | 4,202 | 415.33 | 69.19 | 4.30 | 114.70 | .1573 | 5.00 | .00806 | .00417 | .00223 |
| Pacific Southwest | 111 | - | 6,225 | 461.05 | 73.44 | 4.54 | 106.40 | .1604 | 6.34 | .00953 | .00493 | .00249 |
| **MAINTENANCE** | $ | % | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 785 | 40 | 3,234 | 147.23 | 32.17 | 2.01 | 28.92 | .0760 | 1.22 | .00333 | .00172 | .00105 |
| Eastern | 377 | 39 | 5,589 | 146.82 | 36.78 | 2.40 | 25.93 | .0806 | 1.04 | .00333 | .00172 | .00110 |
| Southern | 125 | 41 | 2,953 | 135.34 | 28.58 | 1.78 | 27.18 | .0736 | .95 | .00266 | .00137 | .00095 |
| Western | 281 | 41 | 2,124 | 153.84 | 28.93 | 1.73 | 32.53 | .0716 | 1.66 | .00376 | .00195 | .00104 |
| New England | 30 | 38 | 3,949 | 121.50 | 35.37 | 2.44 | 18.69 | .0871 | 1.16 | .00500 | .00258 | .00141 |
| Trunk Line | 159 | 37 | 7,392 | 126.27 | 37.66 | 2.70 | 26.13 | .0848 | .97 | .00330 | .00171 | .00114 |
| Central | 188 | 40 | 4,901 | 177.19 | 36.29 | 2.18 | 27.46 | .0765 | 1.09 | .00318 | .00161 | .00103 |
| Pocahontas | 39 | 42 | 5,040 | 132.23 | 29.97 | 2.29 | 23.24 | .0699 | .56 | .00183 | .00095 | .00078 |
| Southeastern | 86 | 41 | 2,489 | 136.79 | 28.00 | 1.61 | 29.43 | .0754 | 1.38 | .00333 | .00172 | .00106 |
| Western Trunk Line | 137 | 41 | 2,316 | 148.70 | 29.58 | 1.77 | 28.66 | .0758 | 1.48 | .00391 | .00202 | .00109 |
| Southwestern | 65 | 43 | 1,889 | 139.80 | 27.44 | 1.58 | 31.04 | .0723 | 1.51 | .00368 | .00190 | .00102 |
| Pacific Northwest | 34 | 42 | 1,757 | 173.64 | 28.93 | 1.80 | 47.95 | .0657 | 2.09 | .00537 | .00174 | .00093 |
| Pacific Southwest | 44 | 40 | 2,484 | 183.99 | 29.31 | 1.81 | 42.46 | .0640 | 2.53 | .00380 | .00197 | .00099 |
| **TRANSPORTATION** | $ | % | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 809 | 41 | 3,333 | 151.77 | 33.16 | 2.07 | 29.82 | .0783 | 1.25 | .00343 | .00178 | .00108 |
| Eastern | 415 | 43 | 6,145 | 161.41 | 40.43 | 2.65 | 28.51 | .0886 | 1.14 | .00366 | .00189 | .00121 |
| Southern | 121 | 40 | 2,860 | 131.09 | 27.68 | 1.72 | 26.33 | .0713 | .92 | .00257 | .00133 | .00092 |
| Western | 272 | 40 | 2,054 | 148.74 | 27.97 | 1.67 | 31.45 | .0692 | 1.60 | .00364 | .00188 | .00100 |
| New England | 34 | 43 | 4,520 | 139.05 | 40.48 | 2.79 | 21.39 | .0997 | 1.33 | .00296 | .00296 | .00162 |
| Trunk Line | 190 | 44 | 8,818 | 150.63 | 44.92 | 3.22 | 31.17 | .1011 | 1.16 | .00394 | .00201 | .00136 |
| Central | 190 | 41 | 4,964 | 179.46 | 36.76 | 2.21 | 27.82 | .0774 | 1.10 | .00322 | .00166 | .00105 |
| Pocahontas | 35 | 38 | 4,692 | 121.52 | 27.54 | 2.11 | 21.36 | .0642 | .92 | .00168 | .00087 | .00072 |
| Southeastern | 85 | 40 | 2,466 | 135.51 | 27.74 | 1.60 | 29.16 | .0747 | 1.36 | .00330 | .00171 | .00105 |
| Western Trunk Line | 133 | 40 | 2,258 | 145.02 | 28.85 | 1.73 | 27.95 | .0739 | 1.44 | .00381 | .00197 | .00107 |
| Southwestern | 59 | 39 | 1,676 | 128.16 | 25.15 | 1.45 | 28.45 | .0662 | 1.39 | .00337 | .00174 | .00095 |
| Pacific Northwest | 32 | 39 | 1,650 | 163.09 | 27.17 | 1.69 | 45.04 | .0618 | 1.96 | .00317 | .00161 | .00088 |
| Pacific Southwest | 46 | 41 | 2,573 | 190.57 | 30.35 | 1.88 | 43.98 | .0663 | 2.62 | .00394 | .00201 | .00109 |
| **OVERHEAD #** | $ | % | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 371 | 19 | 1,529 | 69.64 | 15.22 | .95 | 13.68 | .0359 | .57 | .00158 | .00081 | .00050 |
| Eastern | 183 | 19 | 2,716 | 71.35 | 17.87 | 1.16 | 12.60 | .0392 | .51 | .00162 | .00084 | .00053 |
| Southern | 59 | 20 | 1,408 | 64.54 | 13.63 | .85 | 12.96 | .0351 | .46 | .00127 | .00066 | .00046 |
| Western | 127 | 19 | 964 | 69.82 | 13.13 | .79 | 14.76 | .0325 | .75 | .00171 | .00088 | .00047 |
| New England | 14 | 19 | 1,944 | 59.81 | 17.41 | 1.20 | 9.20 | .0429 | .58 | .00246 | .00127 | .00069 |
| Trunk Line | 81 | 19 | 3,788 | 64.72 | 19.30 | 1.38 | 13.39 | .0435 | .50 | .00169 | .00088 | .00058 |
| Central | 86 | 19 | 2,267 | 81.95 | 16.79 | 1.01 | 12.70 | .0354 | .50 | .00147 | .00076 | .00048 |
| Pocahontas | 18 | 20 | 2,392 | 62.74 | 14.22 | 1.09 | 11.03 | .0332 | .27 | .00087 | .00045 | .00037 |
| Southeastern | 41 | 19 | 1,189 | 65.37 | 13.38 | .77 | 14.07 | .0360 | .66 | .00159 | .00082 | .00051 |
| Western Trunk Line | 62 | 19 | 1,060 | 68.07 | 13.54 | .81 | 13.12 | .0347 | .68 | .00179 | .00092 | .00050 |
| Southwestern | 28 | 19 | 796 | 60.85 | 11.94 | .69 | 13.51 | .0315 | .66 | .00160 | .00083 | .00044 |
| Pacific Northwest | 15 | 19 | 795 | 78.60 | 13.09 | .81 | 21.71 | .0298 | .95 | .00153 | .00079 | .00042 |
| Pacific Southwest | 20 | 19 | 1,168 | 86.49 | 13.78 | .85 | 19.96 | .0301 | 1.19 | .00179 | .00092 | .00047 |

* For the United States, Cars and Net Tons originated for all other Districts, Cars and Net Tons equated to represent one handling per Rate Territory.
\# Does not include Loss and Damage Freight.

SECTION 75. FUNCTION COSTS

Analysis 75.5 Rail Function Cost Percentages - 1932

| PURPOSE DISTRICTS AND TERRITORIES | ALL EXPENSE AND TAXES | OVERHEAD TOTAL OVERHEAD | OVERHEAD AD-MINISTRATION TAXES | DIRECT EXPENSES TOTAL DIRECT | MAINTENANCE WAY AND STRUCTURES TOTAL | ROADWAY | POWER STRUCTURE | STATION | WHARVES DOCKS | MAINTENANCE EQUIPMENT LOCO-MOTIVE | FREIGHT CAR HOME | FREIGHT CAR FOREIGN | TRANSPORTATION MEN'S | SUPPLIES | STATION AGE | FLOATAGE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Road and Yard | 100 | 18.9 | 9.1 | 81.1 | 12.9 | 11.6 | .6 | .5 | .2 | 27.0 | 9.8 | 12.8 | 4.4 | 41.2 | 31.1 | 1.6 | 7.9 | .6 |
| United States | 100 | 18.8 | 9.8 | 81.2 | 11.3 | 10.0 | .6 | .5 | .2 | 27.4 | 9.9 | 12.6 | 4.9 | 42.5 | 31.6 | 1.8 | 8.1 | 1.1 |
| Eastern | 100 | 19.5 | 9.4 | 80.5 | 15.2 | 13.8 | .7 | .5 | .3 | 25.7 | 10.4 | 11.0 | 1.3 | 39.6 | 30.5 | 1.4 | 7.6 | .2 |
| Southern | 100 | 18.9 | 9.0 | 81.1 | 14.2 | 12.9 | .7 | .5 | .2 | 27.0 | 9.3 | 12.7 | 5.1 | 39.9 | 30.6 | 1.5 | 10.8 | .1 |
| New England | 100 | 18.7 | 9.0 | 81.3 | 11.7 | 10.6 | .6 | .5 | .2 | 27.6 | 9.4 | 13.7 | 5.2 | 40.4 | 31.2 | 1.2 | 10.5 | 2.2 |
| Trunk Line | 100 | 18.7 | 9.1 | 81.1 | 10.0 | 8.6 | .6 | .5 | .2 | 27.0 | 10.8 | 12.1 | 5.2 | 40.4 | 32.0 | 1.2 | 8.2 | #.2 |
| Central | 100 | 18.7 | 9.0 | 81.3 | 11.9 | 10.8 | .6 | .4 | .1 | 28.5 | 9.4 | 13.7 | 5.5 | 40.9 | 31.1 | 1.7 | 7.6 | .5 |
| Pocahontas | 100 | 19.8 | 9.5 | 80.2 | 15.2 | 13.3 | 1.0 | .5 | .5 | 26.6 | 11.7 | 15.2 | Cr. .3 | 38.4 | 30.2 | 1.7 | 6.0 | .5 |
| Southeastern | 100 | 19.4 | 9.3 | 80.6 | 15.2 | 13.9 | .5 | .6 | .4 | 25.3 | 9.9 | 13.4 | 2.0 | 40.1 | 30.1 | 1.2 | 8.3 | .1 |
| Western Trunk Line | 100 | 18.8 | 9.0 | 81.2 | 13.8 | 12.2 | .7 | .5 | .1 | 27.3 | 8.8 | 13.8 | 4.8 | 40.1 | 30.4 | 1.7 | 8.0 | #.1 |
| Southwestern | 100 | 18.5 | 8.9 | 81.5 | 15.4 | 14.3 | .6 | .5 | .4 | 27.1 | 9.3 | 11.5 | 6.4 | 39.0 | 29.3 | 1.0 | 8.6 | .1 |
| Pacific Northwest | 100 | 18.9 | 9.1 | 81.1 | 16.1 | 15.0 | .7 | .3 | #.1 | 25.7 | 10.3 | 11.1 | 4.2 | 39.3 | 31.2 | 1.7 | 6.3 | .1 |
| Pacific Southwest | 100 | 18.8 | 9.8 | 81.2 | 12.8 | 11.6 | .6 | .7 | .1 | 27.1 | 10.0 | 12.1 | 5.1 | 41.3 | 32.4 | 1.5 | 7.0 | .3 |
| Road | 100 | 19.6 | 9.4 | 80.4 | 21.9 | 20.9 | .9 | .2 | - | 18.6 | 15.4 | 2.2 | 1.0 | 39.9 | 37.8 | .3 | 1.8 | - |
| United States | 100 | 19.7 | 9.4 | 80.3 | 20.5 | 19.5 | .9 | .2 | - | 19.2 | 15.9 | 2.1 | 1.6 | 40.3 | 37.6 | .3 | 1.9 | - |
| Eastern | 100 | 19.7 | 9.4 | 80.4 | 24.5 | 23.5 | .9 | .1 | - | 18.2 | 16.1 | 2.2 | 1.2 | 37.2 | 35.4 | .3 | 1.5 | - |
| Southern | 100 | 19.5 | 9.4 | 80.5 | 22.5 | 21.4 | .9 | .2 | - | 17.8 | 14.4 | 2.2 | 1.2 | 40.2 | 38.1 | .3 | 1.8 | - |
| Western | 100 | 19.6 | 9.4 | 80.4 | 23.7 | 22.7 | .8 | .2 | - | 15.7 | 13.6 | 1.3 | .8 | 40.9 | 38.4 | .2 | 2.4 | - |
| New England | 100 | 19.6 | 9.4 | 80.4 | 18.3 | 17.3 | .8 | .2 | - | 19.9 | 17.2 | 2.0 | .7 | 42.1 | 39.9 | .3 | 2.0 | - |
| Trunk Line | 100 | 19.5 | 9.4 | 80.5 | 21.9 | 20.8 | .9 | .1 | - | 19.2 | 15.2 | 2.7 | 1.2 | 39.5 | 37.4 | .4 | 1.7 | - |
| Central | 100 | 19.7 | 9.5 | 80.3 | 24.1 | 22.8 | 1.3 | .1 | - | 20.4 | 17.7 | 2.5 | .2 | 35.7 | 34.5 | .3 | 1.0 | - |
| Pocahontas | 100 | 19.6 | 9.4 | 80.4 | 24.6 | 23.8 | .7 | .2 | - | 17.9 | 15.4 | 1.9 | .6 | 37.8 | 35.8 | .3 | 1.7 | - |
| Southeastern | 100 | 19.5 | 9.4 | 80.5 | 22.6 | 21.4 | 1.0 | .2 | - | 17.4 | 14.1 | 2.1 | 1.2 | 40.4 | 38.4 | .2 | 1.8 | - |
| Western Trunk Line | 100 | 19.5 | 9.4 | 80.5 | 24.3 | 23.2 | .8 | .2 | - | 18.5 | 14.0 | 2.2 | 1.3 | 38.7 | 36.1 | .2 | 2.4 | - |
| Southwestern | 100 | 19.5 | 9.4 | 80.5 | 21.7 | 20.3 | 1.0 | .1 | - | 18.2 | 15.2 | 1.7 | 1.2 | 40.1 | 38.0 | .3 | 1.3 | - |
| Pacific Northwest | 100 | 19.5 | 9.4 | 80.5 | 19.5 | 18.6 | .8 | .2 | - | 18.8 | 15.1 | 2.6 | 1.1 | 42.1 | 40.2 | .5 | 1.3 | - |
| Pacific Southwest | 100 | 19.5 | 9.4 | 80.5 | 19.5 | 18.6 | .8 | .2 | - | 18.8 | 15.1 | 2.6 | 1.1 | 42.1 | 40.2 | .5 | 1.3 | - |
| Yard | 100 | 18.3 | 8.8 | 81.7 | 5.3 | 3.8 | .4 | .8 | .4 | 34.1 | 5.1 | 21.8 | 7.3 | 42.2 | 25.3 | 2.7 | 13.0 | 1.1 |
| United States | 100 | 18.3 | 8.8 | 81.7 | 4.9 | 3.5 | .4 | .8 | .4 | 33.1 | 5.8 | 19.7 | 7.6 | 43.7 | 26.8 | 2.8 | 12.4 | 1.9 |
| Eastern | 100 | 19.3 | 9.3 | 80.7 | 5.8 | 4.0 | .5 | .9 | .5 | 32.8 | 4.7 | 25.9 | 2.2 | 48.1 | 25.5 | 2.5 | 13.7 | .4 |
| Southern | 100 | 18.0 | 8.6 | 82.1 | 5.8 | 4.1 | .4 | .9 | .4 | 34.6 | 4.0 | 23.5 | 9.2 | 39.7 | 22.8 | 2.8 | 13.9 | .2 |
| Western | 100 | 17.9 | 8.6 | 82.1 | 6.7 | 5.0 | .4 | 1.0 | .3 | 39.9 | 4.7 | 15.6 | 9.6 | 45.5 | 25.8 | 2.1 | 17.6 | #.7 |
| New England | 100 | 18.5 | 8.9 | 81.5 | 4.4 | 2.8 | .3 | .7 | .6 | 34.7 | 6.5 | 18.8 | 6.4 | 45.4 | 26.8 | 2.7 | 12.3 | 3.7 |
| Trunk Line | 100 | 18.1 | 8.7 | 81.9 | 5.2 | 3.9 | .5 | .6 | .2 | 34.8 | 5.4 | 21.1 | 8.3 | 41.9 | 26.9 | 3.0 | 11.6 | .5 |
| Central | 100 | 19.9 | 10.4 | 80.1 | 5.8 | 4.5 | .6 | .4 | .1 | 33.1 | 5.5 | 20.8 | Cr. .9 | 42.2 | 25.6 | 2.2 | 11.8 | 1.1 |
| Pocahontas | 100 | 19.1 | 9.2 | 80.9 | 5.8 | 4.2 | .4 | 1.0 | .1 | 32.7 | 4.2 | 23.8 | 7.5 | 42.2 | 25.8 | 2.2 | 11.2 | .1 |
| Southeastern | 100 | 18.2 | 8.7 | 81.8 | 6.2 | 4.2 | .4 | .8 | .7 | 35.8 | 4.2 | 23.8 | 7.5 | 39.8 | 23.6 | 2.9 | 13.3 | .1 |
| Western Trunk Line | 100 | 17.4 | 8.3 | 82.6 | 5.3 | 4.1 | .3 | .8 | .1 | 38.1 | 3.9 | 22.0 | 12.2 | 39.3 | 21.6 | 1.9 | 15.6 | .1 |
| Southwestern | 100 | 18.1 | 8.7 | 81.9 | 6.6 | 5.5 | .4 | .6 | .1 | 36.5 | 3.4 | 24.5 | 8.6 | 38.8 | 21.6 | 3.6 | 13.4 | .2 |
| Pacific Northwest | 100 | 17.8 | 8.5 | 82.2 | 4.5 | 2.9 | .2 | 1.2 | .1 | 37.3 | 3.5 | 29.8 | 10.0 | 40.4 | 22.7 | 2.8 | 14.1 | .7 |
| Pacific Southwest | | | | | | | | | | | | | | | | | | |

# Less than .05 percent.



SECTION 77. MAINTENANCE COSTS

Analysis 77.1 Carrier Maintenance Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | PER TON MILE NET RAIL | PER TON MILE NET WATER | PER TON MILE EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RAIL** | | | | | | | | | | | | | |
| Maintenance-Total | $785,184 | 31% | $3,234 | 147 | $28.92 | $1.22 | $32.17 | $ 2.01 | $.0760 | $.0011 | $.0033 | | - $.0017 |
| Roadway | 228,146 | 9 | 940 | 43 | 8.41 | .35 | 9.35 | .58 | .0221 | .0003 | .0010 | | - .0005 |
| Station | 9,334 | # | 38 | 2 | .34 | .01 | .38 | .02 | .0009 | .0000 | .0000 | | - .0000 |
| Wharves | 4,422 | # | 18 | 1 | .16 | .01 | .18 | .01 | .0004 | .0000 | .0000 | | - .0000 |
| Power | 204,532 | 8 | 842 | 38 | 7.54 | .32 | 8.38 | .52 | .0198 | .0003 | .0009 | | - .0005 |
| Vehicles | 338,750 | 13 | 1,395 | 64 | 12.48 | .52 | 13.88 | .87 | .0328 | .0005 | .0014 | | - .0007 |
| **WATER** | | | | | | | | | | | | | |
| **CARLOT** | | | | | | | | | | | | | |
| Maintenance-Total | $ 18,521 | 18% | $ 108 | 170 | - | $ .99 | $ 6.59 | $ .90 | - | - | $.0010 | $.0006 | - |
| Roadway* | 1,878 | 2 | 11 | 17 | - | .10 | .67 | .09 | - | - | .0001 | .0001 | - |
| Station | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Wharves | 2,139 | 2 | 12 | 20 | - | .11 | .76 | .10 | - | - | .0001 | .0001 | - |
| Power | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicles | 14,507 | 14 | 85 | 133 | - | .77 | 5.16 | .70 | - | - | .0008 | .0004 | - |
| **CARGO** | | | | | | | | | | | | | |
| Maintenance-Total | $ 3,652 | 21% | $ 39 | 925 | - | $ .13 | $ 5.08 | $ .82 | - | - | $.0002 | $.0002 | - |
| Roadway | 114 | 1 | 1 | 29 | - | .00 | .16 | .03 | - | - | .0000 | .0000 | - |
| Station | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Wharves | 25 | # | 0 | 6 | - | .00 | .03 | .01 | - | - | .0000 | .0000 | - |
| Power | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vehicles | 3,513 | 20 | 38 | 889 | - | .12 | 4.89 | .79 | - | - | .0002 | .0002 | - |
| **PIPE** | | | | | | | | | | | | | |
| Maintenance-Total | $ 48,355 | 23% | $ 521 | - | - | $ .58 | - | - | - | - | $.0015/ | - | - |
| Roadway | 29,336 | 14 | 316 | - | - | .35 | - | - | - | - | .0009/ | - | - |
| Station | 4,015 | 2 | 43 | - | - | .05 | - | - | - | - | .0001/ | - | - |
| Wharves | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Power | 15,004 | 7 | 162 | - | - | .18 | - | - | - | - | .0005/ | - | - |
| Vehicles | - | - | - | - | - | - | - | - | - | - | - | - | - |

# Less than 1/2%

* Intermediate Wharfage and Dockage.

/ Actual Distance.

SECTION 77. MAINTENANCE COSTS

Analysis 77.2 Rail Maintenance Unit Costs - 1932

| | AGGREGATE (000) | PER CENT OF TOTAL COST | PER ROUTE MILE | PER SCHED-ULE | PER SCHED-ULE HOUR | SCHED-ULE MILE | PER VEHI-CLE ORIG. OR EQUAT-ED | PER VEHI-CLE MILE | PER NET TON | PER NET TON MILE | PER EQUAT-ED TON MILE | PER GROSS TON MILE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ROADWAY** | $ | % | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 228,146 | 12 | 940 | 42.78 | 9.35 | .58 | 8.41 | .0221 | .35 | .00097 | .00050 | .00031 |
| New England | 10,515 | 13 | 1,378 | 42.38 | 12.34 | .85 | 6.52 | .0304 | .41 | .00174 | .00090 | .00049 |
| Trunk Line | 37,242 | 9 | 1,727 | 29.49 | 8.80 | .63 | 6.10 | .0198 | .23 | .00077 | .00040 | .00027 |
| Central | 50,106 | 11 | 1,306 | 47.22 | 9.67 | .58 | 7.32 | .0204 | .29 | .00085 | .00044 | .00028 |
| Pocahontas | 12,460 | 13 | 1,609 | 42.21 | 9.57 | .73 | 7.42 | .0223 | .18 | .00058 | .00030 | .00025 |
| Southern Freight | 29,844 | 14 | 856 | 47.07 | 9.63 | .56 | 10.13 | .0259 | .47 | .00115 | .00059 | .00037 |
| Western Trunk Line | 40,595 | 12 | 686 | 44.03 | 8.76 | .52 | 8.49 | .0225 | .44 | .00116 | .00060 | .00032 |
| Southwestern | 21,938 | 14 | 615 | 47.02 | 9.23 | .53 | 10.44 | .0243 | .51 | .00124 | .00064 | .00034 |
| Pacific Northwest | 12,516 | 15 | 691 | 62.41 | 10.40 | .65 | 17.23 | .0236 | .75 | .00121 | .00063 | .00034 |
| Pacific Southwest | 12,930 | 12 | 719 | 53.27 | 8.49 | .52 | 12.29 | .0185 | .73 | .00110 | .00057 | .00029 |
| **STATION** | $ | % | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 9,334 | # | 38 | 1.75 | .38 | .02 | .34 | .0009 | .01 | .00004 | .00002 | .00001 |
| New England | 511 | 1 | 67 | 2.06 | .60 | .04 | .32 | .0015 | .02 | .00008 | .00004 | .00002 |
| Trunk Line | 2,084 | # | 97 | 1.65 | .49 | .04 | .34 | .0011 | .01 | .00004 | .00002 | .00001 |
| Central | 1,816 | # | 47 | 1.71 | .35 | .02 | .27 | .0007 | .01 | .00003 | .00002 | .00001 |
| Pocahontas | 328 | # | 42 | 1.11 | .25 | .02 | .20 | .0006 | .00 | .00002 | .00001 | .00001 |
| Southern Freight | 1,192 | 1 | 34 | 1.88 | .38 | .02 | .40 | .0010 | .02 | .00005 | .00002 | .00001 |
| Western Trunk Line | 1,684 | 1 | 28 | 1.82 | .36 | .02 | .35 | .0009 | .02 | .00005 | .00002 | .00001 |
| Southwestern | 719 | # | 20 | 1.54 | .30 | .02 | .34 | .0008 | .02 | .00004 | .00002 | .00001 |
| Pacific Northwest | 266 | # | 13 | 1.33 | .22 | .01 | .37 | .0005 | .02 | .00003 | .00001 | .00001 |
| Pacific Southwest | 734 | 1 | 41 | 3.02 | .48 | .03 | .70 | .0011 | .04 | .00006 | .00003 | .00002 |
| **POWER** | $ | % | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 204,532 | 10 | 842 | 38.35 | 8.38 | .52 | 7.54 | .0198 | .32 | .00087 | .00045 | .00027 |
| New England | 7,486 | 9 | 981 | 30.17 | 8.79 | .60 | 4.64 | .0216 | .29 | .00124 | .00064 | .00035 |
| Trunk Line | 48,803 | 11 | 2,263 | 38.65 | 11.53 | .83 | 8.00 | .0260 | .30 | .00101 | .00052 | .00035 |
| Central | 46,144 | 10 | 1,211 | 43.77 | 8.97 | .54 | 6.78 | .0189 | .27 | .00079 | .00041 | .00026 |
| Pocahontas | 11,854 | 13 | 1,528 | 40.09 | 9.09 | .70 | 7.04 | .0212 | .17 | .00056 | .00029 | .00024 |
| Southern Freight | 22,280 | 10 | 699 | 35.14 | 7.19 | .41 | 7.56 | .0194 | .35 | .00086 | .00044 | .00027 |
| Western Trunk Line | 31,582 | 9 | 533 | 34.26 | 6.81 | .41 | 6.80 | .0175 | .34 | .00090 | .00047 | .00025 |
| Southwestern | 15,125 | 10 | 421 | 32.42 | 6.36 | .37 | 7.20 | .0168 | .35 | .00085 | .00044 | .00024 |
| Pacific Northwest | 9,219 | 11 | 465 | 45.97 | 7.66 | .48 | 12.69 | .0174 | .55 | .00089 | .00046 | .00025 |
| Pacific Southwest | 11,759 | 11 | 654 | 48.45 | 7.72 | .48 | 11.18 | .0169 | .67 | .00100 | .00052 | .00026 |
| **VEHICLE** | $ | % | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 338,750 | 17 | 1,395 | 63.52 | 13.88 | .87 | 12.48 | .0328 | .52 | .00144 | .00074 | .00045 |
| New England | 11,516 | 14 | 1,509 | 46.12 | 13.51 | .93 | 7.14 | .0333 | .44 | .00191 | .00099 | .00054 |
| Trunk Line | 69,870 | 16 | 3,239 | 55.33 | 16.50 | 1.18 | 11.45 | .0372 | .43 | .00145 | .00075 | .00050 |
| Central | 89,051 | 19 | 2,321 | 89.92 | 17.19 | 1.03 | 13.01 | .0342 | .51 | .00151 | .00078 | .00049 |
| Pocahontas | 13,920 | 15 | 1,797 | 47.15 | 10.69 | .82 | 8.29 | .0249 | .20 | .00065 | .00034 | .00028 |
| Southern Freight | 33,133 | 15 | 951 | 52.25 | 10.70 | .62 | 11.24 | .0288 | .53 | .00127 | .00066 | .00041 |
| Western Trunk Line | 61,914 | 19 | 1,046 | 67.15 | 13.36 | .80 | 12.94 | .0342 | .67 | .00176 | .00091 | .00049 |
| Southwestern | 27,381 | 18 | 768 | 58.69 | 11.52 | .66 | 13.03 | .0303 | .64 | .00154 | .00080 | .00045 |
| Pacific Northwest | 12,799 | 15 | 646 | 63.82 | 10.63 | .66 | 17.62 | .0242 | .77 | .00124 | .00064 | .00034 |
| Pacific Southwest | 19,166 | 17 | 1,066 | 78.97 | 12.58 | .78 | 18.22 | .0275 | 1.09 | .00163 | .00084 | .00045 |
| **WHARF** | $ | % | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 4,422 | # | 18 | .83 | .18 | .01 | .16 | .0004 | .01 | .00002 | .00001 | .00001 |
| New England | 117 | # | 15 | .47 | .14 | .01 | .07 | .0003 | # | .00002 | .00001 | .00001 |
| Trunk Line | 1,447 | # | 67 | 1.15 | .34 | .02 | .24 | .0008 | .01 | .00003 | .00002 | .00001 |
| Central | 606 | # | 16 | .57 | .12 | .01 | .09 | .0002 | # | .00001 | .00001 | .** |
| Pocahontas | 191 | 1 | 63 | 1.67 | .38 | .03 | .29 | .0009 | .01 | .00002 | .00001 | .00001 |
| Southern Freight | 286 | # | 8 | .45 | .09 | .01 | .10 | .0002 | # | .00001 | .00001 | .** |
| Western Trunk Line | 1,325 | # | 22 | 1.44 | .29 | .02 | .28 | .0007 | .01 | .00004 | .00002 | .00001 |
| Southwestern | 58 | # | 2 | .13 | .02 | # | .03 | .0001 | # | .** | .** | .** |
| Pacific Northwest | 24 | # | 1 | .12 | .02 | # | .03 | * | # | .** | .** | .** |
| Pacific Southwest | 68 | # | 4 | .28 | .04 | # | .06 | .0001 | # | .00001 | .** | .** |

* Less than .00005.
** Less than . 000005.
\# Less than .1/2%.
# Less than .005.



SECTION 77. MAINTENANCE COSTS

Analysis 77.3 Water Maintenance Unit Costs - 1932

| | AGGREGATE (000) | REVE-NUE RATIO | ROUTE MILE | SCHED-ULE | VE-HICLE | NET TON | SCHED-ULE HOUR | SCHED-ULE MILE | VE-HICLE MILE | PER TON MILE GROSS | PER TON MILE NET RAIL | PER TON MILE NET WATER | PER TON MILE EQUAT-ED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CARLOT | | | | | | | | | | | | | |
| ROADWAY | | | | | | | | | | | | | |
| United States | $ 1,878 | 2% | $ 11 | $ 17 | - | $ .10 | $ .67 | $ .09 | - | - | $.0001 | $.0001 | - |
| Atlantic Coast | 284 | 1 | 13 | 19 | - | .06 | .40 | .05 | - | - | .0002 | .0001 | - |
| Atlantic Gulf | 848 | 6 | 32 | 742 | - | .37 | 2.99 | .30 | - | - | .0003 | .0003 | - |
| Intercoastal | 327 | 1 | 4 | 752 | - | .08 | .41 | .06 | - | - | .0000 | .0000 | - |
| Inland Waterways | 185 | 2 | 20 | 273 | - | .08 | .83 | .22 | - | - | .0001 | .0001 | - |
| Great Lakes | 98 | 1 | 9 | 7 | - | .03 | .42 | .05 | - | - | .0001 | .0001 | - |
| Pacific Coast | 135 | 1 | 10 | 1 | - | .05 | .21 | .04 | - | - | .0001 | .0001 | - |
| WHARVES | | | | | | | | | | | | | |
| United States | $ 2,139 | 2% | $ 12 | $ 20 | - | $ .11 | $ .76 | $ .10 | - | - | $.0001 | $.0001 | - |
| Atlantic Coast | 871 | 4 | 39 | 61 | - | .19 | 1.22 | .15 | - | - | .0005 | .0004 | - |
| Atlantic Gulf | 375 | 3 | 11 | 328 | - | .16 | 1.32 | .13 | - | - | .0001 | .0001 | - |
| Intercoastal | 493 | 1 | 6 | 1,135 | - | .13 | .61 | .08 | - | - | .0000 | .0000 | - |
| Inland Waterways | 284 | 3 | 30 | 420 | - | .12 | 1.28 | .34 | - | - | .0002 | .0001 | - |
| Great Lakes | 67 | 1 | 6 | 5 | - | .02 | .28 | .04 | - | - | .0001 | .0001 | - |
| Pacific Coast | 48 | 1 | 3 | 1 | - | .02 | .09 | .01 | - | - | .0000 | .0000 | - |
| VEHICLES | | | | | | | | | | | | | |
| United States | $ 14,507 | 14% | $ 85 | $ 133 | - | $ .77 | $ 5.16 | $ .70 | - | - | $.0008 | $.0004 | - |
| Atlantic Coast | 3,311 | 13 | 148 | 232 | - | .71 | 4.63 | .58 | - | - | .0019 | .0017 | - |
| Atlantic Gulf | 2,918 | 22 | 112 | 2,555 | - | 1.28 | 10.31 | 1.03 | - | - | .0011 | .0009 | - |
| Intercoastal | 4,143 | 11 | 47 | 9,545 | - | 1.06 | 5.16 | .70 | - | - | .0004 | .0002 | - |
| Inland Waterways | 1,598 | 19 | 168 | 2,364 | - | .70 | 7.20 | 1.89 | - | - | .0011 | .0007 | - |
| Great Lakes | 1,210 | 16 | 111 | 95 | - | .40 | 5.14 | .64 | - | - | .0011 | .0009 | - |
| Pacific Coast | 1,326 | 14 | 94 | 16 | - | .51 | 2.40 | .38 | - | - | .0013 | .0014 | - |
| CARGO | | | | | | | | | | | | | |
| ROADWAY | | | | | | | | | | | | | |
| United States | $ 114 | 1% | $ 1 | $ 29 | - | $ .00 | $ .16 | $ .03 | - | - | $.0000 | $.0000 | - |
| Atlantic Coast | 69 | 2 | 4 | 133 | - | .02 | .08 | .13 | - | - | .0000 | .0000 | - |
| Atlantic Gulf | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| Intercoastal | 23 | 13 | 4 | 1,434 | - | .47 | .67 | .12 | - | - | .0002 | .0001 | - |
| Inland Waterways | 1 | 0 | 0 | 3 | - | .00 | .01 | .00 | - | - | .0000 | .0000 | - |
| Great Lakes | 21 | 0 | 0 | 9 | - | .00 | .06 | .01 | - | - | .0000 | .0000 | - |
| Pacific Coast | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| WHARVES | | | | | | | | | | | | | |
| United States | $ 25 | 0% | $ 0 | $ 6 | - | $ .00 | $ .03 | $ .01 | - | - | $.0000 | $.0000 | - |
| Atlantic Coast | 1 | 0 | 0 | 2 | - | .00 | .01 | .00 | - | - | .0000 | .0000 | - |
| Atlantic Gulf | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| Intercoastal | 14 | 1 | 2 | 856 | - | .28 | .11 | .07 | - | - | .0000 | .0000 | - |
| Inland Waterways | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| Great Lakes | 9 | 0 | 0 | 4 | - | .00 | .02 | .00 | - | - | .0000 | .0000 | - |
| Pacific Coast | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| VEHICLES | | | | | | | | | | | | | |
| United States | $ 3,513 | 20% | $ 38 | $ 889 | - | $ .12 | $ 4.89 | $ .79 | - | - | $.0002 | $.0002 | - |
| Atlantic Coast | 871 | 27 | 47 | 1,681 | - | .26 | 9.61 | 1.59 | - | - | .0004 | .0004 | - |
| Atlantic Gulf | 221 | 18 | 24 | 5,882 | - | .43 | 7.09 | 1.39 | - | - | .0003 | .0007 | - |
| Intercoastal | 51 | 28 | 8 | 3,171 | - | 1.05 | 1.48 | .26 | - | - | .0004 | .0002 | - |
| Inland Waterways | 69 | 7 | 17 | 301 | - | .12 | 1.02 | .28 | - | - | .0001 | .0001 | - |
| Great Lakes | 2,240 | 20 | 45 | 1,027 | - | .09 | 6.22 | .79 | - | - | .0001 | .0001 | - |
| Pacific Coast | 59 | 16 | 10 | 60 | - | .36 | .44 | .13 | - | - | .0009 | .0009 | - |

## SECTION 77. MAINTENANCE

### Analysis 77.4 Cost of Pipe Maintenance

| | AGGREGATE (000) | REVENUE RATE | PER ROUTE MILE | PER NET TON | PER NET TON MILE |
|---|---|---|---|---|---|
| **TOTAL MAINTENANCE** | | | | | |
| United States | $ 48,355 | 23% | $ 521 | $ .58 | $ .0015 |
| North Atlantic | 2,647 | 28 | 180 | .94 | .0025 |
| Great Lakes-Southwest | 22,170 | 22 | 495 | .88 | .0011 |
| Gulf-Southwest | 23,538 | 23 | 707 | .43 | .0025 |
| **ROADWAY** | | | | | |
| United States | $ 29,336 | 14% | $ 316 | $ .35 | $ .0009 |
| North Atlantic | 2,133 | 23 | 145 | .76 | .0020 |
| Great Lakes-Southwest | 14,108 | 14 | 315 | .56 | .0007 |
| Gulf-Southwest | 13,095 | 13 | 394 | .24 | .0014 |
| **STATION** | | | | | |
| United States | $ 4,015 | 2% | $ 43 | $ .05 | $ .0001 |
| North Atlantic | 107 | 1 | 7 | .04 | .0001 |
| Great Lakes-Southwest | 1,525 | 2 | 34 | .06 | .0001 |
| Gulf-Southwest | 2,382 | 3 | 72 | .04 | .0003 |
| **POWER** | | | | | |
| United States | $ 15,004 | 7% | $ 162 | $ .18 | $ .0005 |
| North Atlantic | 406 | 4 | 28 | .14 | .0004 |
| Great Lakes-Southwest | 6,537 | 7 | 146 | .26 | .0003 |
| Gulf-Southwest | 8,061 | 8 | 242 | .15 | .0009 |



## SECTION 80. POWER MAINTENANCE COSTS

### Analysis 80.1 Rail Power Maintenance Costs by Types of Trains - 1932 (Gross Ton Mile Basis)

| | COST OF POWER MAINTENANCE PER TRAIN MILE* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ALL TRAINS | | MAIN LINE TRAINS | | | | | | BRANCH LINE TRAINS | |
| | | | MANIFEST TRAINS | | DRAG TRAINS | | WAY TRAINS | | | |
| | GROSS TONS | COST | GROSS TONS | COST | GROSS TONS | COST | GROSS TONS | COST | GROSS TONS | COST |
| UNITED STATES | 1,910 | $ .37 | 2,123 | $ .45 | 2,101 | $ .46 | 1,029 | $ .23 | 667 | $ .15 |
| NEW ENGLAND | 1,725 | $ .43 | 2,353 | $ .58 | 2,292 | $ .57 | 837 | $ .22 | 437 | $ .11 |
| Connecticut | 2,062 | .53 | 2,484 | .64 | 2,434 | .62 | 627 | .19 | 449 | .12 |
| Maine | 1,438 | .36 | 1,985 | .53 | 2,321 | .56 | 1,218 | .32 | 431 | .11 |
| Massachusetts | 1,680 | .43 | 2,454 | .61 | 2,162 | .56 | 808 | .23 | 453 | .11 |
| New Hampshire | 1,953 | .54 | 2,948 | .79 | 2,561 | .68 | 706 | .19 | 443 | .12 |
| Rhode Island | 2,128 | .44 | 2,180 | .45 | 3,075 | .63 | 560 | .11 | 314 | .06 |
| Vermont | 1,465 | .29 | 2,049 | .38 | 1,718 | .36 | 527 | .11 | 405 | .08 |
| TRUNK LINE | 2,369 | $ .53 | 2,983 | $ .61 | 2,775 | $ .66 | 1,395 | $ .34 | 974 | $ .27 |
| Delaware | 1,692 | .31 | 3,042 | .55 | 1,380 | .25 | 1,152 | .21 | 669 | .12 |
| Maryland | 2,332 | .51 | 2,658 | .56 | 3,692 | .90 | 1,155 | .27 | 781 | .17 |
| New Jersey | 1,992 | .60 | 2,467 | .71 | 3,378 | 1.04 | 1,331 | .44 | 848 | .27 |
| New York | 2,397 | .54 | 3,187 | .68 | 2,596 | .59 | 1,209 | .30 | 1,097 | .35 |
| Pennsylvania | 2,428 | .51 | 2,986 | .56 | 2,871 | .69 | 1,614 | .35 | 976 | .26 |
| CENTRAL | 2,110 | $ .35 | 2,326 | $ .39 | 2,597 | $ .42 | 1,122 | $ .20 | 764 | $ .14 |
| Illinois | 1,886 | .28 | 2,089 | .31 | 2,220 | .33 | 937 | .15 | 653 | .10 |
| Indiana | 2,139 | .33 | 2,590 | .38 | 2,318 | .38 | 1,053 | .17 | 698 | .10 |
| Michigan | 1,722 | .36 | 2,122 | .43 | 2,078 | .44 | 780 | .17 | 600 | .12 |
| Ohio | 2,420 | .42 | 2,552 | .45 | 3,091 | .51 | 1,351 | .25 | 1,083 | .22 |
| POCAHONTAS | 2,937 | $ .53 | 3,021 | $ .50 | 3,910 | $ .72 | 1,173 | $ .26 | 1,164 | $ .22 |
| Virginia | 2,784 | .56 | 3,429 | .64 | 3,311 | .74 | 868 | .21 | 754 | .25 |
| West Virginia | 3,111 | .50 | 2,581 | .45 | 4,751 | .69 | 1,516 | .33 | 1,363 | .21 |
| SOUTHEASTERN | 1,522 | $ .32 | 1,913 | $ .40 | 1,911 | $ .39 | 874 | $ .20 | 597 | $ .14 |
| Alabama | 1,362 | .31 | 1,923 | .43 | 1,599 | .37 | 883 | .22 | 671 | .13 |
| Florida | 1,113 | .33 | 1,969 | .57 | 1,103 | .34 | 1,048 | .31 | 642 | .20 |
| Georgia | 1,368 | .27 | 1,958 | .37 | 1,515 | .31 | 918 | .19 | 548 | .10 |
| Kentucky | 2,149 | .36 | 2,126 | .36 | 2,600 | .43 | 924 | .15 | 784 | .10 |
| Mississippi | 1,443 | .25 | 1,933 | .31 | 1,590 | .30 | 828 | .17 | 501 | .08 |
| North Carolina | 1,442 | .35 | 1,874 | .45 | 1,777 | .44 | 695 | .17 | 464 | .12 |
| South Carolina | 1,251 | .37 | 1,536 | .45 | 1,607 | .49 | 718 | .23 | 567 | .13 |
| Tennessee | 1,438 | .32 | 1,724 | .39 | 1,700 | .38 | 925 | .21 | 529 | .15 |
| WESTERN TRUNK LINE | 1,620 | $ .30 | 2,242 | $ .39 | 1,954 | $ .35 | 871 | $ .21 | 567 | $ .12 |
| Iowa | 1,516 | .27 | 1,875 | .33 | 1,805 | .31 | 753 | .15 | 508 | .12 |
| Kansas | 1,712 | .31 | 2,418 | .42 | 1,937 | .34 | 943 | .20 | 684 | .15 |
| Minnesota | 1,582 | .38 | 2,353 | .49 | 2,290 | .43 | 918 | .38 | 516 | .13 |
| Missouri | 1,736 | .29 | 2,185 | .34 | 2,214 | .38 | 845 | .18 | 513 | .09 |
| Nebraska | 1,751 | .31 | 2,674 | .44 | 1,801 | .36 | 815 | .15 | 573 | .12 |
| North Dakota | 1,385 | .31 | 2,478 | .56 | 1,944 | .39 | 860 | .21 | 606 | .15 |
| South Dakota | 1,281 | .26 | 2,032 | .39 | 1,668 | .33 | 975 | .21 | 468 | .09 |
| Wisconsin | 1,643 | .29 | 2,332 | .39 | 1,994 | .35 | 865 | .16 | 523 | .10 |
| SOUTHWESTERN | 1,556 | $ .30 | 2,138 | $ .39 | 1,899 | $ .32 | 867 | $ .20 | 651 | $ .13 |
| Arkansas | 1,540 | .26 | 2,030 | .33 | 1,833 | .28 | 627 | .15 | 584 | .10 |
| Louisiana | 1,375 | .28 | 1,873 | .37 | 1,905 | .38 | 942 | .20 | 491 | .10 |
| New Mexico | 2,070 | .37 | 2,748 | .48 | 2,008 | .35 | 1,120 | .23 | 763 | .14 |
| Oklahoma | 1,488 | .29 | 2,038 | .38 | 1,994 | .36 | 899 | .22 | 710 | .15 |
| Texas | 1,542 | .29 | 2,132 | .41 | 1,814 | .28 | 876 | .19 | 670 | .14 |
| PACIFIC NORTHWEST | 1,926 | $ .41 | 2,848 | $ .61 | 2,152 | $ .42 | 1,089 | $ .24 | 579 | $ .14 |
| Idaho | 1,763 | .28 | 2,800 | .45 | 2,595 | .42 | 915 | .14 | 507 | .08 |
| Montana | 2,283 | .50 | 3,226 | .76 | 2,495 | .50 | 1,350 | .29 | 636 | .14 |
| Oregon | 1,360 | .36 | 2,427 | .62 | 1,913 | .55 | 1,006 | .28 | 522 | .14 |
| Washington | 1,479 | .40 | 2,362 | .71 | 1,769 | .41 | 928 | .23 | 636 | .18 |
| Wyoming | 2,554 | .43 | 3,051 | .51 | 2,093 | .35 | 1,332 | .22 | 776 | .13 |
| PACIFIC SOUTHWEST | 1,826 | $ .40 | 2,436 | $ .51 | 1,764 | $ .43 | 921 | $ .22 | 529 | $ .14 |
| Arizona | 2,392 | .40 | 2,793 | .47 | 2,204 | .37 | 1,079 | .18 | 1,138 | .19 |
| California | 1,834 | .40 | 2,559 | .56 | 2,051 | .44 | 940 | .22 | 592 | .14 |
| Colorado | 994 | .38 | 1,314 | .47 | 898 | .41 | 839 | .24 | 220 | .16 |
| Nevada | 2,848 | .41 | 3,498 | .49 | 2,456 | .37 | 883 | .19 | 436 | .06 |
| Utah | 2,064 | .43 | 2,576 | .48 | 2,063 | .69 | 936 | .18 | 481 | .09 |

* Road Power only.

## SECTION 80. POWER MAINTENANCE COSTS

Analysis 80.2 Rail Power Maintenance Costs by Types of Trains - 1932 (Locomotive Ton Mile Basis)

| | COST OF POWER MAINTENANCE PER TRAIN MILE* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ALL TRAINS | | MAIN LINE TRAINS | | | | | | BRANCH LINE TRAINS | |
| | | | MANIFEST TRAINS | | DRAG TRAINS | | WAY TRAINS | | | |
| | GROSS TONS | COST | GROSS TONS | COST | GROSS TONS | COST | GROSS TONS | COST | GROSS TONS | COST |
| UNITED STATES | 1,910 | $ .37 | 2,123 | $ .44 | 2,101 | $ .40 | 1,029 | $ .30 | 667 | $ .22 |
| NEW ENGLAND | 1,725 | $ .43 | 2,353 | $ .53 | 2,292 | $ .51 | 837 | $ .30 | 437 | $ .24 |
| Connecticut | 2,062 | .53 | 2,464 | .61 | 2,434 | .58 | 627 | .34 | 449 | .21 |
| Maine | 1,438 | .36 | 1,985 | .42 | 2,321 | .50 | 1,218 | .28 | 431 | .24 |
| Massachusetts | 1,680 | .43 | 2,464 | .59 | 2,162 | .48 | 808 | .33 | 453 | .21 |
| New Hampshire | 1,953 | .54 | 2,948 | .59 | 2,961 | .67 | 706 | .28 | 443 | .27 |
| Rhode Island | 2,128 | .44 | 2,180 | .47 | 3,075 | .51 | 960 | .28 | 314 | .19 |
| Vermont | 1,465 | .29 | 2,049 | .38 | 1,718 | .30 | 527 | .17 | 405 | .22 |
| TRUNK LINE | 2,369 | $ .53 | 2,983 | $ .65 | 2,775 | $ .47 | 1,395 | $ .43 | 974 | $ .35 |
| Delaware | 1,692 | .31 | 3,042 | .34 | 1,380 | .32 | 1,152 | .29 | 669 | .28 |
| Maryland | 2,332 | .51 | 2,658 | .53 | 3,692 | .67 | 1,155 | .43 | 781 | .31 |
| New Jersey | 1,992 | .60 | 2,467 | .65 | 3,378 | .66 | 1,331 | .56 | 848 | .53 |
| New York | 2,397 | .54 | 3,187 | .65 | 2,596 | .57 | 1,209 | .41 | 1,097 | .28 |
| Pennsylvania | 2,428 | .51 | 2,986 | .56 | 2,871 | .56 | 1,614 | .43 | 976 | .38 |
| CENTRAL | 2,110 | $ .35 | 2,326 | $ .36 | 2,597 | $ .41 | 1,122 | $ .28 | 764 | $ .20 |
| Illinois | 1,886 | .28 | 2,089 | .31 | 2,220 | .28 | 937 | .22 | 653 | .18 |
| Indiana | 2,139 | .33 | 2,590 | .37 | 2,318 | .34 | 1,053 | .25 | 698 | .16 |
| Michigan | 1,722 | .36 | 2,122 | .39 | 2,078 | .37 | 780 | .28 | 600 | .27 |
| Ohio | 2,420 | .42 | 2,552 | .44 | 3,091 | .43 | 1,351 | .36 | 1,083 | .28 |
| POCAHONTAS | 2,937 | $ .53 | 3,021 | $ .55 | 3,910 | $ .60 | 1,173 | $ .41 | 1,164 | $ .40 |
| Virginia | 2,784 | .56 | 3,429 | .62 | 3,311 | .62 | 868 | .37 | 754 | .40 |
| West Virginia | 3,111 | .50 | 2,581 | .40 | 4,751 | .58 | 1,516 | .40 | 1,363 | .41 |
| SOUTHEASTERN | 1,522 | $ .32 | 1,913 | $ .35 | 1,911 | $ .35 | 874 | $ .27 | 597 | $ .26 |
| Alabama | 1,362 | .31 | 1,923 | .40 | 1,599 | .33 | 883 | .25 | 671 | .22 |
| Florida | 1,113 | .33 | 1,969 | .36 | 1,103 | .33 | 1,048 | .35 | 642 | .33 |
| Georgia | 1,368 | .27 | 1,958 | .30 | 1,515 | .29 | 918 | .25 | 548 | .21 |
| Kentucky | 2,149 | .36 | 2,126 | .44 | 2,600 | .36 | 924 | .27 | 784 | .23 |
| Mississippi | 1,443 | .25 | 1,933 | .25 | 1,590 | .29 | 828 | .25 | 501 | .18 |
| North Carolina | 1,442 | .35 | 1,874 | .39 | 1,777 | .40 | 695 | .26 | 464 | .25 |
| South Carolina | 1,251 | .37 | 1,536 | .44 | 1,607 | .46 | 718 | .24 | 567 | .29 |
| Tennessee | 1,438 | .32 | 1,724 | .36 | 1,700 | .36 | 925 | .26 | 529 | .23 |
| WESTERN TRUNK LINE | 1,620 | $ .30 | 2,242 | $ .37 | 1,954 | $ .31 | 871 | $ .27 | 567 | $ .20 |
| Iowa | 1,516 | .27 | 1,875 | .33 | 1,805 | .26 | 753 | .19 | 508 | .19 |
| Kansas | 1,712 | .31 | 2,418 | .38 | 1,937 | .35 | 943 | .21 | 684 | .18 |
| Minnesota | 1,582 | .38 | 2,353 | .46 | 2,290 | .49 | 918 | .31 | 516 | .25 |
| Missouri | 1,736 | .29 | 2,185 | .32 | 2,214 | .23 | 845 | .24 | 513 | .16 |
| Nebraska | 1,751 | .31 | 2,674 | .42 | 1,801 | .31 | 815 | .21 | 573 | .21 |
| North Dakota | 1,385 | .31 | 2,478 | .40 | 1,944 | .35 | 860 | .28 | 606 | .23 |
| South Dakota | 1,281 | .26 | 2,032 | .38 | 1,668 | .24 | 975 | .26 | 468 | .18 |
| Wisconsin | 1,643 | .29 | 2,332 | .35 | 1,994 | .29 | 865 | .23 | 523 | .21 |
| SOUTHWESTERN | 1,556 | $ .30 | 2,138 | $ .34 | 1,899 | $ .34 | 867 | $ .23 | 651 | $ .20 |
| Arkansas | 1,540 | .26 | 2,030 | .32 | 1,833 | .31 | 827 | .11 | 584 | .16 |
| Louisiana | 1,375 | .28 | 1,873 | .30 | 1,905 | .39 | 942 | .25 | 491 | .18 |
| New Mexico | 2,070 | .37 | 2,748 | .41 | 2,008 | .39 | 1,120 | .35 | 763 | .24 |
| Oklahoma | 1,488 | .29 | 2,038 | .34 | 1,994 | .31 | 899 | .26 | 710 | .24 |
| Texas | 1,542 | .29 | 2,132 | .32 | 1,814 | .31 | 876 | .24 | 670 | .22 |
| PACIFIC NORTHWEST | 1,926 | $ .41 | 2,848 | $ .54 | 2,152 | $ .46 | 1,089 | $ .29 | 579 | $ .19 |
| Idaho | 1,763 | .28 | 2,800 | .44 | 2,595 | .41 | 915 | .15 | 507 | .08 |
| Montana | 2,283 | .50 | 3,226 | .60 | 2,495 | .57 | 1,350 | .39 | 636 | .27 |
| Oregon | 1,360 | .36 | 2,427 | .61 | 1,933 | .45 | 1,006 | .32 | 522 | .17 |
| Washington | 1,479 | .40 | 2,362 | .50 | 1,769 | .46 | 928 | .33 | 636 | .27 |
| Wyoming | 2,554 | .43 | 3,051 | .50 | 2,093 | .38 | 1,332 | .21 | 776 | .12 |
| PACIFIC SOUTHWEST | 1,826 | $ .40 | 2,436 | $ .47 | 1,764 | $ .40 | 921 | $ .31 | 529 | $ .23 |
| Arizona | 2,392 | .40 | 2,793 | .43 | 2,204 | .39 | 1,079 | .33 | 1,138 | .34 |
| California | 1,834 | .40 | 2,559 | .48 | 2,051 | .44 | 940 | .33 | 592 | .21 |
| Colorado | 994 | .38 | 1,314 | .44 | 898 | .39 | 839 | .36 | 220 | .16 |
| Nevada | 2,848 | .41 | 3,498 | .44 | 2,456 | .43 | 883 | .30 | 436 | .20 |
| Utah | 2,064 | .43 | 2,576 | .54 | 2,063 | .42 | 936 | .20 | 481 | .11 |

* Road Power Only.



## SECTION 81. MODERNIZATION

Analysis 81.1 Summary of Specifications of Single Power Car (Container Units)

| SPECIFICATION | AUTOMATIC GEAR CORPORATION MECHANICAL 4-CONTAINERS | BESLER SYSTEMS MECHANICAL 4-CONTAINERS | BESLER SYSTEMS STEAM 4-CONTAINERS | BESLER SYSTEMS STEAM 4-CONTAINERS | BROWN GURNEY CORPORATION MECHANICAL 6-CONTAINERS | CLARK EQUIPMENT COMPANY HYDRAULIC 5-CONTAINERS | INGERSOLL RAND COMPANY DIESEL ELECTRIC 3-CONTAINERS | RYAN CAR COMPANY STEAM 3-CONTAINERS | WESTINGHOUSE ELECTRIC & MFG. CO. DIESEL ELECTRIC 5-CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|
| TRACTIVE POWER | | | | | | | | | |
| Horsepower | | | | | | | | | |
| Aggregate / | 400 | 280 | 525 | 1,050 | 700 | 570 | 530 | 500 | 530 |
| Wheel // | 360 | 220 | 500 | 1,000 | 560 | 456 | 424 | - | 30,500 |
| Tractive Effort - Lbs. (000) | 30 | 16 | 13 | 25 | 20 | 14 | 34 | - | 31 |
| TONNAGE RATING # | | | | | | | | | |
| AT 60 MILES PER HOUR | | 55M/H | | | | | | | |
| Car Tons | 112 | 31 | 220 | 639 | 256 | - | 99 | 195 | 137 |
| Net Tons | 87 | 0 | 170 | 464 | 206 | - | 74 | 145 | 112 |
| Trailing Cars ** | 1 | 0 | 2 | 7 | 2 | - | 1 | 2 | 1 |
| AT 50 MILES PER HOUR | | | | | | | | | |
| Car Tons | 254 | 83 | 408 | 810 | 460 | 348 | 312 | 393 | 303 |
| Net Tons | 204 | 58 | 308 | 585 | 335 | 248 | 237 | 293 | 228 |
| Trailing Cars ** | 2 | 1 | 4 | 9 | 5 | 4 | 3 | 4 | 3 |
| AT 40 MILES PER HOUR | | | | | | | | | |
| Car Tons | 475 | 227 | 705 | 1,580 | 796 | 620 | 564 | 660 | 555 |
| Net Tons | 350 | 177 | 505 | 1,130 | 571 | 445 | 414 | 435 | 405 |
| Trailing Cars ** | 5 | 2 | 8 | 18 | 9 | 7 | 6 | 7 | 6 |
| WEIGHT OF POWER UNIT • (000) | 54 | 66 | 70 | 75 | 79 | 70 | 132 | 130 | 115 |
| FUEL | | | | | | | | | |
| Kind | Diesel | Diesel | Oil | Oil | Diesel | Diesel | Diesel | Oil | Diesel |
| MILEAGE | | | | | | | | | |
| Daily | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Annual (000) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| INVESTMENT ## | | | | | | | | | |
| Initial Cost (000) | $ 43 | $ 19 | $ 40 | $ 60 | $ 33 | $ 28 | $ 40 | $ 59 | $ 45 |
| Life in Years | 15 | 15 | 15 | 15 | 10 | 10 | 20 | 20 | 25 |
| Life in Miles (000) | 1,500 | 1,500 | 1,500 | 1,500 | 1,000 | 1,000 | 2,000 | 2,000 | 2,500 |
| OPERATING COST PER MILE, CENTS ## | | | | | | | | | |
| Power Maintenance | | | | | | | | | |
| Repairs | 1.00 | .937 | 1.375 | 2.00 | 4.00 | 3.00 | 3.20 | 2.10 | 8.10 |
| Depreciation | 3.00 | 1.250 | 1.831 | 2.67 | 4.00 | 2.80 | 2.00 | 2.95 | 2.00 |
| Total | 4.00 | 2.187 | 3.206 | 4.67 | 8.00 | 5.80 | 5.20 | 5.05 | 10.10 |
| Transportation | | | | | | | | | |
| Fuel / | 1.00 | .720 | 3.60 | 7.20 | 2.64 | 2.25 | 1.20 | 5.700 | 5.00 |
| Lubrication | .10 | .150 | .09 | .13 | 1.25 | .22 | .30 | .315 | 1.50 |
| Supplies | .06 | .250 | .25 | .25 | 1.00 | .30 | .05 | .200 | .50 |
| Total | 1.16 | 1.120 | 3.94 | 7.58 | 4.89 | 2.77 | 1.55 | 6.215 | 7.00 |
| Total Operating Costs | 5.16 | 4.307 | 7.146 | 12.25 | 12.89 | 8.57 | 6.75 | 11.265 | 17.10 |

\# Based on level tangent track. Trailing load only, not including container carload.
/ Based on tons of coal or gallons of oil per horsepower hour.
** Container Car - Gross Weight 87 1/2 tons, Tare 25 tons including containers.
• Prime Mover Horsepower, including that required for auxiliaries.
// Net horsepower for traction.
## Actual submissions from manufacturers.
• No containers on motive power unit.

SECTION 81. MODERNIZATION

Analysis 81.2 Summary of Specifications of Small Steam Power Units (Locomotives)*

| SPECIFICATION | BALDWIN LOCOMOTIVE WORKS 4-4-0 | BALDWIN LOCOMOTIVE WORKS 4-4-0 | BALDWIN LOCOMOTIVE WORKS 4-4-0 | BESLER SYSTEMS DOUBLE TRUCK | BETHLEHEM STEEL COMPANY FOUR WHEELS TWO POWER TRUCKS | BETHLEHEM STEEL COMPANY FOUR WHEELS ONE POWER TRUCK AND ONE AUXILIARY POWER TRUCK | LIMA LOCOMOTIVE WORKS 4-4-0 |
|---|---|---|---|---|---|---|---|
| **TRACTIVE POWER** | | | | | | | |
| Horsepower | | | | | | | |
| Aggregate / | 644 | 936 | 1,473 | 2,100 | 962 | 735 | 850 |
| Wheel // | - | - | - | 2,000 | - | - | - |
| Tractive Effort - Lbs. (000) | 14 | 20 | 25 | 60 | 12 | 14 | 12 |
| **TONNAGE RATING #** | | | | | | | |
| At 60 Miles per Hour | | | | | | | |
| Car Tons | - | - | - | 1,475 | 524 | 202 | 215 |
| Net Tons | - | - | - | 1,075 | 374 | 152 | 195 |
| Trailing Cars ** | - | - | - | 16 | 6 | 2 | 2 |
| At 50 Miles per Hour | | | | | | | |
| Car Tons | 150 | 300 | 500 | 2,150 | 994 | 386 | 637 |
| Net Tons | 125 | 225 | 375 | 1,550 | 719 | 286 | 462 |
| Trailing Cars ** | 1 | 3 | 5 | 24 | 11 | 4 | 7 |
| At 40 Miles per Hour | | | | | | | |
| Car Tons | 826 | 1,310 | 2,230 | 3,290 | 1,280 | 638 | 875 |
| Net Tons | 591 | 935 | 1,605 | 2,390 | 930 | 463 | 625 |
| Trailing Cars ** | 9 | 15 | 25 | 36 | 14 | 7 | 10 |
| **WEIGHT OF UNIT (000)** | 91 | 100 | 150 | 240 | 190 | 190 | - |
| **FUEL** | Oil | Oil | Oil | - | Oil | Oil | Oil |
| Kind | Coal | Coal | Coal | Oil | Coal | Coal | Coal ### |
| Consumption - Gals. Hour / | 2.1 | 2.61 | 2.71 | 0.15(2.7 lbs. or)(0.337 gals.) | (3.4 lbs. or)(0.425 gals.) | | |
| **MILEAGE** | | | | | | | |
| Daily | 300 | 300 | 300 | 300 | 300 | - | 300 |
| Annual (000) | 75 | 75 | 75 | 100 | 100 | - | 100 |
| **INVESTMENT ##** | | | | | | | |
| Initial Cost (000) | $ 25 | $ 30 | $ 35 | $ 85 | $ 35 | $ 35 | $ 27 |
| Life in Years | 18 | 16 | 14 | 15 | 15 | 15 | 20 |
| Life in Miles (000) | 1,350 | 1,200 | 1,050 | 1,500 | 1,500 | 1,500 | 2,000 |
| **OPERATING COSTS PER MILE, CENTS ##** | | | | | | | |
| Power Maintenance | | | | | | | |
| Repairs | 6.4 | 9.00 | 13.65 | 3.8 | 3.90 | 3.90 | 9.00 |
| Depreciation | 1.85 | 2.50 | 3.33 | 5.07 | 3.50 | 3.50 | 1.37 |
| Total | 8.25 | 11.50 | 16.98 | 8.87 | 7.40 | 7.40 | 10.37 |
| Transportation | | | | | | | |
| Fuel | 3.00 | 5.419 | 8.88 | 14.40 | 8.60 | 4.50 | 5.50 |
| Lubrication | .005 | .005 | .005 | .25 | .05 | .05 | - |
| Supplies | .003 | .003 | .003 | .25 | .05 | .05 | - |
| Total | 4.338 | 5.427 | 8.96 | 14.90 | 8.70 | 4.60 | 5.50 |
| Total Operating Costs | 12.588 | 16.927 | 25.94 | 23.77 | 16.10 | 12.00 | 15.87 |

* No containers on motive power unit.
\# Based on level tangent track.
/ Based on tons of coal or gallons of oil per horsepower hour.
** Container Car - Gross Weight 87-1/2 tons, Tare 25 tons including containers.
/ Prime mover horsepower, including that required for auxiliaries.
// Net horsepower for traction.
## Actual submissions from manufacturers.
### 95 pounds coal per 1000 gross ton miles; 8.4 gallons oil per 100 pounds coal.



SECTION 81. MODERNIZATION

Analysis 81.3 Summary of Specifications of Diesel Power Units *

| SPECIFICATION | DIESEL-ELECTRIC BALDWIN LOCOMOTIVE WORKS LOCOMOTIVE | DIESEL-ELECTRIC INGERSOLL-RAND COMPANY RAIL CAR | DIESEL-ELECTRIC INGERSOLL-RAND COMPANY LOCOMOTIVE | DIESEL-MECHANICAL AUTOMATIC GEAR CORPORATION LOCOMOTIVE | DIESEL-MECHANICAL AUTOMATIC GEAR CORPORATION LOCOMOTIVE | DIESEL-MECHANICAL CLARK *** EQUIPMENT COMPANY LOCOMOTIVE |
|---|---|---|---|---|---|---|
| **TRACTIVE POWER** | | | | | | |
| Horsepower | | | | | | |
| Aggregate / | 600 | 600 | 800 | 400 | 600 | 1,600 |
| Wheel / / | 450 | 480 | 640 | 360 | 540 | 1,280 |
| Tractive Effort - Lbs. (000) | 29 | 36 | 40 | 30 | 50 | 37 |
| **TONNAGE RATING #** | | | | | | |
| At 60 Miles per Hour | | | | | | |
| Car Tons | - | 210 | 335 | 132 | 267 | 901 |
| Net Tons | - | 160 | 260 | 107 | 182 | 651 |
| Trailing Cars ** | - | 2 | 3 | 1 | 3 | 10 |
| At 50 Miles per Hour | 45 M/H | | | | | |
| Car Tons | 463 | 388 | 568 | 273 | 470 | 1,350 |
| Net Tons | 338 | 288 | 418 | 198 | 345 | 975 |
| Trailing Cars ** | 5 | 4 | 6 | 3 | 5 | 15 |
| At 40 Miles per Hour | | | | | | |
| Car Tons | 620 | 675 | 950 | 497 | 793 | 2,085 |
| Net Tons | 445 | 400 | 700 | 372 | 568 | 1,510 |
| Trailing Cars ** | 7 | 7 | 10 | 5 | 9 | 23 |
| **WEIGHT OF UNIT (000)** | 200 | 180 | 200 | 120 | 160 | 154 |
| **FUEL** | | | | | | |
| Kind | Diesel | Diesel | Diesel | Diesel | Diesel | Diesel |
| Consumption - Gals. Hr./ | 0.34 | - | - | .016 | .015 | .616 |
| **MILEAGE** | | | | | | |
| Daily | 300 | 350 | 350 | 300 | 300 | 300 |
| Annual (000) | 75 | 101 | 101 | 100 | 100 | 100 |
| **INVESTMENT ##** | | | | | | |
| Initial Cost (000) | $ 110 | $ 85 | $ 110 | $ 38 | $ 65 | $ 97 |
| Life in Years | 23 | 23 | 21 | 15 | 15 | 15 |
| Life in Miles (000) | 1,750 | - | - | 1,500 | 1,500 | 1,500 |
| **OPERATING COSTS PER MILE, CENTS ##** | | | | | | |
| Power Maintenance | | | | | | |
| Repairs | 3.33 | 3.98 | 5.00 | 1.00 | 1.00 | 6.00 |
| Depreciation | 6.88 | 3.38 | 4.37 | 2.50 | 4.33 | 9.70 |
| Total | 9.710 | 7.36 | 9.37 | 3.50 | 5.33 | 15.00 |
| Transportation | | | | | | |
| Fuel | 3.75 | 3.60 | 4.50 | 1.00 | 1.00 | 6.75 |
| Lubrication | .025 | .32 | .53 | .10 | .13 | .675 |
| Supplies | .003 | .30 | .30 | .06 | .06 | .300 |
| Total | 3.778 | 5.72 | 6.83 | 1.16 | 1.19 | 7.725 |
| Total Operating Costs | 13.488 | 13.09 | 16.20 | 4.66 | 6.52 | 23.425 |

* No containers on motive power unit.
\# Based on level tangent track.
/ Based on tons of coal or gallons of oil per horsepower hour.
** Container Car - Gross Weight 87-1/2 tons, Tare 25 tons including containers.
*** Diesel-Hydraulic.
/ Prime mover horsepower, including that required for auxiliaries.
// Net horsepower for traction.
## Actual submissions from manufacturers.

SECTION 81. MODERNIZATION

Analysis 81.4 Fixed and Variable Line Costs - Indicated by Submissions for Freight Power Cars

| | AUTOMATIC GEAR CORPORATION MECHANICAL | BESLER SYSTEM MECHANICAL | BESLER SYSTEM 500 H.P. STEAM | BESLER SYSTEM 1000 H.P. STEAM | BROWN GURVEY CORPORATION MECHANICAL | CLARK EQUIPMENT COMPANY HYDRAULIC | INGERSOLL RAND COMPANY DIESEL ELECTRIC | KYAN CAR COMPANY STEAM | WESTINGHOUSE ELECTRIC & MFG. CO DIESEL ELECTRIC |
|---|---|---|---|---|---|---|---|---|---|
| Capacity | Based on Maximum Speed of 50 miles per hour on level, tangent track. | | | | | | | | |
| Total Revenue Cars | 3 | 2 | 5 | 10 | 6 | 5 | 4 | 5 | 4 |
| Gross Tonnage - Total | 259 | 177.5 | 442 | 882.5 | 562.5 | 456.3 | 370.7 | 457.7 | 390.5 |
| Power Car | 84 | 90 | 90 | 95 | 125 | 106.3 | 108.2 | 107.7 | 125 |
| Trailers | 175 | 87.5 | 350 | 787.5 | 437.5 | 350 | 262.5 | 350 | 265.5 |
| Containers - Total | 4 | 9 | 24 | 49 | 31 | 25 | 18 | 23 | 20 |
| Power Car | 4 | 4 | 4 | 4 | 6 | 5 | 3 | 3 | 5 |
| Trailers | 10 | 5 | 20 | 45 | 25 | 20 | 15 | 20 | 15 |
| Net Tonnage - Total | 175 | 112.5 | 300 | 612.5 | 387.5 | 312.5 | 225 | 287.5 | 250 |
| Power Car | 50 | 50 | 50 | 50 | 75 | 62.5 | 37.5 | 37.5 | 62.5 |
| Trailers | 125 | 62.5 | 250 | 562.5 | 312.5 | 250 | 187.5 | 250 | 187.5 |
| Tractive Effort | 254 | 112.5 | 358 | 635 | 410 | 348 | 274.5 | 393 | 290.5 |
| Average Load - Loaded Cars (60%) | 1.8 | 1.2 | 3.0 | 6.0 | 3.6 | 3.0 | 2.4 | 3.0 | 2.4 |
| Loaded Containers (60%) | 8.4 | 5.4 | 14.4 | 29.4 | 18.6 | 15.0 | 10.8 | 13.8 | 12.0 |
| Net Tonnage * | 75.6 | 48.6 | 129.6 | 264.6 | 167.4 | 135.0 | 97.2 | 124.2 | 108.0 |
| Variable Line Cost per Train Mile - | | | | | | | | | |
| Power Maintenance | 4.00 | 2.19 | 3.21 | 4.67 | 8.00 | 5.80 | 5.20 | 5.05 | 10.10 |
| Power Transportation | 1.16 | 1.12 | 3.94 | 7.58 | 4.89 | 3.07 | 1.55 | 6.21 | 7.00 |
| Wages | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 |
| Total | 18.49 | 17.64 | 20.48 | 25.58 | 26.22 | 22.20 | 20.08 | 24.59 | 30.43 |
| Total Line Cost - Per Loaded Car Mile - | | | | | | | | | |
| Variable # | 10.25 | 14.70 | 6.83 | 4.25 | 7.30 | 7.40 | 8.35 | 8.16 | 12.65 |
| Fixed ∮ | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 |
| Total | 21.17 | 25.62 | 17.75 | 15.17 | 18.22 | 18.32 | 19.27 | 19.08 | 23.57 |
| Per Train Mile $ | 38.11 | 30.74 | 53.25 | 60.68 | 65.59 | 54.96 | 46.15 | 57.24 | 56.90 |
| Per Net Ton Mile ¤ | 5.05 | 6.09 | 4.11 | 2.29 | 3.91 | 4.07 | 4.75 | 4.61 | 5.27 |
| Capacity | Based on Maximum Speed of 60 miles per hour on level, tangent track. | | | | | | | | |
| Total Revenue Cars | 2 | 1 | 3 | 8 | 3 | 3 | 2 | 3 | 3 |
| Gross Tonnage - Total | 171.5 | 90.0 | 267.0 | 707.5 | 300.0 | 281.2 | 195.7 | 370.0 | 215.5 |
| Power Car | 84 | 90 | 92 | 95 | 125 | 106.2 | 108.2 | 195 | 128 |
| Trailers | 87.5 | - | 175 | 612.5 | 175 | 175 | 87.5 | 175 | 87.5 |
| Containers - Total | 9 | 14 | 14 | 39 | 16 | 15 | 8 | 13 | 10 |
| Power Car | 4 | 4 | 4 | 4 | 6 | 5 | 3 | 3 | 5 |
| Trailers | 5 | - | 10 | 35 | 10 | 10 | 5 | 10 | 5 |
| Net Tonnage - Total | 112.5 | 50 | 175 | 487.5 | 200 | 187.5 | 100 | 162.5 | 125 |
| Power Car | 50 | 50 | 50 | 50 | 75 | 62.5 | 37.5 | 37.5 | 62.5 |
| Trailers | 62.5 | - | 125 | 437.5 | 125 | 125 | 62.5 | 125 | 62.5 |
| Tractive Effort | 137 | 71 | 220 | 514 | 381 | 210.5 | 111.5 | 182.5 | 174.5 |
| Average Load - Loaded Cars (60%) | 1.2 | 0.6 | 1.8 | 4.8 | 1.8 | 1.8 | 1.2 | 1.8 | 1.8 |
| Loaded Containers (60%) | 5.4 | 2.4 | 8.4 | 23.4 | 9.6 | 9.0 | 4.8 | 7.8 | 6.0 |
| Net Tonnage * | 48.6 | 21.6 | 75.6 | 163.8 | 86.4 | 81.0 | 43.2 | 70.2 | 54.0 |
| Variable Line Cost - Per Train Mile | | | | | | | | | |
| Power Maintenance | 4.00 | 2.19 | 3.21 | 4.67 | 8.00 | 5.80 | 5.20 | 5.05 | 10.10 |
| Power Transportation | 1.16 | 1.12 | 3.94 | 7.58 | 4.89 | 3.07 | 1.55 | 6.21 | 7.00 |
| Wages | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 |
| Total | 18.49 | 16.64 | 20.48 | 25.58 | 26.22 | 22.20 | 20.08 | 24.59 | 30.43 |
| Total Line Cost - Per Loaded Car Mile | | | | | | | | | |
| Variable # | 15.41 | 16.64 | 11.38 | 5.33 | 14.57 | 12.34 | 16.73 | 13.66 | 16.91 |
| Fixed ∮ | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 |
| Total | 26.33 | 27.56 | 22.30 | 16.25 | 25.49 | 23.26 | 27.65 | 24.58 | 27.83 |
| Per Train Mile $ | 31.59 | **27.56 | 40.13 | 77.99 | 45.88 | 41.86 | 33.18 | 44.25 | 50.09 |
| Per Net Ton Mile ¤ | 6.50 | 12.80 | 5.31 | 4.76 | 5.31 | 5.17 | 7.68 | 6.30 | 9.27 |

* Loaded Containers @ 9 tons each.
# Variable Train Mile Cost divided by number of loaded cars.
∮ Average Fixed Line Cost of Rail Branch Line Way Trains.
$ Product, of Car Mile Cost and number of Loaded Cars.
¤ Quotient of Train Mile Cost and Average Load of Net Tonnage.
** Cost is based on running one car instead of the theertical 0.6 car.



SECTION 81. MODERNIZATION

Analysis 81.5 Fixed and Variable Line Costs - Indicated by Submissions for Light Steam Locomotives

| | BALDWIN LOCOMOTIVE WORKS | BALDWIN LOCOMOTIVE WORKS | BALDWIN LOCOMOTIVE WORKS | BESLER SYSTEMS 2000 H.P. | BETHLEHEM STEEL COMPANY 962 H.P. | BETHLEHEM STEEL COMPANY 735 H.P. | LIMA LOCOMOTIVE WORKS | KYAN CAR COMPANY | |
|---|---|---|---|---|---|---|---|---|---|
| Capacity | Based on Maximum Speed of 50 Miles per hour on level, tangent track. | | | | | | | | |
| Total Revenue Cars | 1 | 3 | 5 | 24 | 11 | 4 | 7 | 17 | |
| Gross Tonnage - Total | 133.0 | 312.5 | 512.5 | 2220 | 1057.5 | 445 | 682.5 | 1572.5 | |
| Power Car | 45.5 | 50 | 75 | 120 | 95 | 95 | 70 | 85 | |
| Trailers | 87.5 | 262.5 | 437.5 | 2100 | 962.5 | 350 | 612.5 | 1487.5 | |
| Containers - Total | 5 | 15 | 25 | 120 | 55 | 20 | 35 | 85 | |
| Power Car | - | - | - | - | - | - | - | - | |
| Trailers | 5 | 15 | 25 | 120 | 55 | 20 | 35 | 85 | |
| Net Tonnage - Total | 62.5 | 187.5 | 312.5 | 1500 | 687.5 | 250 | 437.5 | 1122.5 | |
| Power Car | - | - | - | - | - | - | - | - | |
| Trailers | 62.5 | 187.5 | 312.5 | 1500 | 687.5 | 250 | 437.5 | 1122.5 | |
| Tractive Effort | 125 | 225 | 375 | 1550 | 719 | 286 | 462 | 1125 | |
| Average Load - Loaded Cars (60%) | 0.6 | 1.8 | 3.0 | 14.4 | 6.6 | 2.4 | 4.2 | 10.2 | |
| Loaded Containers (60%) | 3.0 | 9.0 | 15.0 | 72.0 | 33.0 | 12.0 | 21.0 | 51.0 | |
| Net Tonnage * | 27.0 | 81.0 | 135.0 | 648.0 | 297.0 | 108.0 | 189.0 | 459.0 | |
| Variable Line Cost - Per Train Mile - | | | | | | | | | |
| Power Maintenance | 8.25 | 11.50 | 16.98 | 8.87 | 7.40 | 7.40 | 10.37 | 7.35 | |
| Power Transportation | 4.35 | 5.42 | 8.96 | 14.90 | 8.70 | 4.50 | 5.50 | 13.80 | |
| Wages | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | |
| Total | 25.91 | 30.25 | 39.27 | 37.10 | 29.43 | 25.23 | 29.20 | 34.48 | |
| Total Line Cost - Per Loaded Car Mile - | | | | | | | | | |
| Variable # | 42.35 | 16.75 | 13.09 | 2.58 | 4.46 | 10.55 | 6.94 | 3.50 | |
| Fixed ∮ | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | |
| Total | 53.27 | 27.67 | 24.01 | 13.50 | 15.38 | 21.47 | 17.86 | 14.42 | |
| Per Train Mile $ | 31.96 | 49.61 | 72.03 | 194.45 | 101.51 | 51.60 | 75.01 | 147.08 | |
| Per Net Ton Mile ¤ | 11.858 | 6.125 | 5.336 | 3.000 | 3.418 | 4.778 | 3.970 | 3.204 | |
| Capacity | Based on Maximum Speed of 60 Miles per hour on level, tangent track. | | | | | | | | |
| Total Revenue Cars | | | | 16 | 6 | 2 | 2 | | |
| Gross Tonnage - Total | Speed Too High | | | 1220 | 520 | 270 | 245 | Speed | |
| Power Car | | | | 120 | 95 | 95 | 70 | | |
| Trailers | | | | 1100 | 425 | 175 | 175 | Too | |
| Containers - Total | | | | 80 | 30 | 10 | 10 | | |
| Power Car | | | | - | - | - | - | High | |
| Trailers | | | | 80 | 30 | 10 | 10 | | |
| Net Tonnage - Total | | | | 1000 | 375 | 125 | 125 | | |
| Power Car | | | | - | - | - | - | | |
| Trailers | | | | 1000 | 375 | 125 | 125 | | |
| Tractive Effort | | | | 1075 | 374 | 152 | 195 | | |
| Average Load - Loaded Cars (60%) | | | | 9.6 | 3.6 | 1.2 | 1.2 | | |
| Loaded Containers (60%) | | | | 48.0 | 18.0 | 6.0 | 6.0 | | |
| Net Tonnage * | | | | 432.0 | 162.0 | 54.0 | 54.0 | | |
| Variable Line Cost - Per Train Mile - | | | | | | | | | |
| Power Maintenance | | | | 8.87 | 7.40 | 7.40 | 10.37 | | |
| Power Transportation | | | | 14.90 | 8.70 | 4.50 | 5.50 | | |
| Wages | | | | 13.33 | 13.33 | 13.33 | 13.33 | | |
| Total | | | | 37.10 | 29.40 | 25.23 | 29.20 | | |
| Total Line Cost - Per Loaded Car Mile - | | | | | | | | | |
| Variable # | | | | 3.82 | 8.17 | 21.02 | 24.30 | | |
| Fixed ∮ | | | | 10.92 | 10.92 | 10.92 | 10.92 | | |
| Total | | | | 14.74 | 19.09 | 31.94 | 35.62 | | |
| Per Train Mile $ | | | | 141.55 | 68.71 | 38.33 | 42.44 | | |
| Per Net Ton Mile ¤ | | | | 3.277 | 4.242 | 7.099 | 7.880 | | |

* Loaded Containers @ 9 tons each.
# Variable Train Mile Cost divided by number of Loaded Cars.
∮ Average Fixed Line Cost of Rail Branch Line Way Trains.
$ Product of Car Mile Cost and number of Loaded Cars.
¤ Quotient of Train Mile Cost and Average Load of Net Tonnage.

Analysis 81.6 Fixed and Variable Costs Indicated by Submissions for Light Diesel - Electric Locomotives and Light Diesel Mechanical Locomotives

| | | ELECTRIC LOCOMOTIVES | | | MECHANICAL LOCOMOTIVES | | |
|---|---|---|---|---|---|---|---|
| | | BALDWIN LOCO-MOTIVE WORKS | INGERSOLL RAND COMPANY | INGERSOLL RAND COMPANY | AUTOMATIC GEAR CORPO-RATION | AUTOMATIC GEAR CORPO-RATION | CLARK EQUIPMENT COMPANY HYDRAULIC |
| Capacity | | Based on Maximum Speed of 50 miles per hour on level, tangent track. | | | | | |
| Total Revenue Cars | | 5 | 4 | 6 | 3 | 5 | 15 |
| Gross Tonnage - Total | | 537.5 | 440 | 625 | 322.5 | 517.5 | 1389.5 |
| Power Car | | 100 | 90 | 100 | 60 | 80 | 77 |
| Trailers | | 437.5 | 350 | 525 | 262.5 | 437.5 | 1312.5 |
| Containers - Total | | 25 | 20 | 30 | 15 | 25 | 75 |
| Power Car | | - | - | - | - | - | - |
| Trailers | | 25 | 20 | 30 | 15 | 25 | 75 |
| Net Tonnage - Total | | 312.5 | 250 | 375 | 187.5 | 312.5 | 937.5 |
| Power Car | | - | - | - | - | - | - |
| Trailers | | 312.5 | 250 | 375 | 187.5 | 312.5 | 937.5 |
| Tractive Effort | | 338 | 288 | 418 | 198 | 345 | 975 |
| Average Load - Loaded Cars (60%) | | 3.0 | 2.4 | 3.6 | 1.8 | 3.0 | 9.0 |
| Loaded Containers (60%) | | 15.0 | 12.0 | 18.0 | 9.0 | 15.0 | 45.0 |
| Net Tonnage | * | 135 | 108 | 162 | 81 | 135 | 405 |
| Variable Line Cost - Per Train Mile - | | | | | | | |
| Power Maintenance | | 9.71 | 7.36 | 9.37 | 3.50 | 5.33 | 15.70 |
| Power Transportation | | 3.78 | 5.72 | 6.83 | 1.16 | 1.19 | 7.72 |
| Wages | | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 |
| Total | | 26.82 | 26.41 | 29.53 | 18.00 | 19.85 | 36.75 |
| Total Line Cost - Per Loaded Car Mile - | | | | | | | |
| Variable | # | 8.96 | 11.25 | 8.23 | 10.00 | 6.62 | 4.08 |
| Fixed | ∮ | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 |
| Total | | 19.88 | 22.17 | 19.15 | 20.92 | 17.54 | 15.00 |
| Per Train Mile | $ | 59.64 | 53.35 | 68.94 | 37.66 | 52.51 | 135.00 |
| Per Net Ton Mile | ■ | 4.430 | 4.940 | 4.256 | 4.649 | 3.889 | 3.333 |
| Capacity | | Based on Maximum Speed of 60 miles per hour on level, tangent track. | | | | | |
| Total Revenue Cars | | 2 | 3 | 1 | 3 | 10 | |
| Gross Tonnage - Total | Speed | 265.0 | 362.5 | 147.5 | 312.5 | 952.0 | |
| Power Car | | 90.0 | 100.0 | 60.0 | 80.0 | 77.0 | |
| Trailers | too | 175.0 | 262.5 | 87.5 | 262.5 | 875.0 | |
| Containers - Total | | 10 | 15 | 5 | 15 | 50 | |
| Power Car | High | - | - | - | - | - | |
| Trailers | | 10 | 15 | 5 | 15 | 50 | |
| Net Tonnage - Total | | 125 | 187.5 | 62.5 | 187.5 | 625 | |
| Power Car | | - | - | - | - | - | |
| Trailers | | 125 | 187.5 | 62.5 | 187.5 | - | |
| Tractive Effort | | 160 | 260 | 117 | 192 | 651 | |
| Average Load - Loaded Cars (60%) | | 1.2 | 1.8 | 0.6 | 1.8 | 6.0 | |
| Loaded Containers (60%) | | 6.0 | 9.0 | 3.0 | 9.0 | 30.0 | |
| Net Tonnage | * | 54.0 | 81.0 | 27.0 | 81.0 | 270.0 | |
| Variable Line Cost - Per Train Mile - | | | | | | | |
| Power Maintenance | | 7.36 | 9.37 | 3.50 | 5.33 | 15.70 | |
| Power Transportation | | 5.72 | 6.83 | 1.17 | 1.19 | 7.72 | |
| Wages | | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | |
| Total | | 26.41 | 29.53 | 18.00 | 19.85 | 36.75 | |
| Total Line Cost - Per Loaded Car Mile - | | | | | | | |
| Variable | # | 22.01 | 16.41 | 30.00 | 11.03 | 6.12 | |
| Fixed | ∮ | 10.92 | 10.92 | 10.92 | 10.92 | 10.92 | |
| Total | | 32.93 | 27.33 | 40.92 | 21.95 | 17.04 | |
| Per Train Mile | $ | 39.51 | 49.19 | 24.55 | 39.51 | 102.21 | |
| Per Net Ton Mile | ■ | 7.317 | 6.072 | 9.093 | 4.877 | 3.785 | |

* Loaded Containers @ 9 tons each.
\# Variable Train Mile Cost divided by number of Loaded Cars.
∮ Average Fixed Line Cost of Rail Branch Line Way Trains.
$ Product of Car Mile Cost and number of Loaded Cars.
■ Quotient of Train Mile Cost and Average Load of Net Tonnage.



Analysis 83.1 Containers Built for Transportation via Rail, Highway or Water

| NAME | TYPE | NUMBER OWNED | OUTSIDE DIMENSIONS LENGTH WIDTH HEIGHT | CAPACITY POUNDS | CAPACITY CUBIC FEET | LIGHT WEIGHT POUND |
|---|---|---|---|---|---|---|
| CONTAINERS DESIGNED TO CARRY ORDINARY FREIGHT, FOR TRANSPORTATION ON FLAT OR GONDOLA CARS | | | | | | |
| Acme Fast Freight, Inc. (W.P.Kellett) | Roll | 4 | 21' 1½"x 7' 9" x 8' 5-3/4" | 25000 | 1,050 | 5,800 |
| Motor Terminals Co. (B.F. Fitch) | Crane Lift | 77 | 20' 0" x 8' 0" x 8' 0" | 60000 | 1,000 | 6,000 |
| Cincinnati Motor Terminals Company | Crane Lift | 250 | 17' 6" x 8' 0" x 8' 0" | 20000 | 950 | - |
| Security Storage Co. | Crane Lift | 54 | 14' 9" x 7' 6" x 8' 2" | 13000 | 800 | 4,000 |
| Mt. Vernon Car Manufacturing Co. | Roll ∮ | 4 | 15' 11½" x 7' 11"x 7' 11" | - | 823 | 2,935 |
| Pennsylvania Railroad | Crane Lift | 50 | 19' 0" x 7' 0" x 7' 4" | 30000 | 790 | 4,000 |
| Pennsylvania Railroad | Crane Lift | 1 | 19' 0" x 7' 0" x 7' 4" | 30000 | 790 | 2,600 |
| Security Storage Co. | Crane Lift * | 10 | 14' 9" x 7' 6" x 8' 2" | 13000 | 700 | 1,900 |
| Security Storage Co. | Crane Lift | 12 | 11' 5" x 7' 6" x 8' 2" | 10000 | 600 | 3,720 |
| Milwaukee Electric Ry. & Light Co. | Slide | 18 | 14' 2" x 6' 8" x 5' 11" | 12500 | 557 | 3,200 |
| Milwaukee Electric Ry. & Light Co. | Slide ** | - | 14' 2" x 6' 8" x 5' 8" | - | - | - |
| Railway Motor Trucking, Inc. | Roll & Slide | - | 9' 0" x 9' 0" x 7' 8" | 28000 | 548 | 4,800 |
| Mt. Vernon Car Co. | Roll ∮ | - | 9' 6" x 7' 9" x 7' 11" | 10000 | 493 | 2,280 |
| Pennsylvania Railroad | Crane Lift | 1 | 9' 0" x 7' 0" x 8' 0" | 12000 | 444 | 2,640 |
| Pennsylvania Railroad | Crane Lift | 1 | 9' 0" x 7' 0" x 8' 0" | 12000 | 440 | 2,800 |
| Pennsylvania Railroad | Crane Lift | 3,150 | 9' 0" x 7' 0" x 8' 0" | 12000 | 440 | 2,900 |
| Pennsylvania Railroad | Crane Lift | 995 | 9' 0" x 7' 0" x 8' 0" | 12000 | 440 | 3,000 |
| Pennsylvania Railroad | Crane Lift | 5 | 9' 0" x 7' 0" x 8' 0" | 12000 | 440 | 3,050 |
| Pennsylvania Railroad | Crane Lift | 10 | 9' 0" x 7' 0" x 8' 0" | 12000 | 440 | 3,100 |
| Youngstown Steel Door Co. | Crane Lift | - | 9' 0" x 7' 0" x 8' 0" | - | 440 | 3,050 |
| Pennsylvania Railroad | Crane Lift | 100 | 9' 0" x 7' 0" x 8' 0" | 12000 | 430 | 2,400 |
| New York Central Railroad | Crane Lift | 753 | 9' 3⅜"x 7' 0⅜"x 8' 1-3/4" | 10000 | 426 | 3,000 |
| The L.C.L. Corporation | Crane Lift | 896 | 9' 3⅜"x 7' 0⅜"x 8' 1-3/4" | 10000 | 426 | 3,000 |
| The L.C.L. Corporation | Lift Truck ∮ | 2,326 | 9' 3-3/8"x 7' 2⅛"x 9' 4" | 10000 | 417 | 2,967 |
| Mt. Vernon Car Manufacturing Co. | Roll ∮ | - | 7' 9" x 6' 0" x 7' 11" | 10000 | 304 | 1,760 |
| CONTAINERS DESIGNED TO CARRY BULK FREIGHT, FOR TRANSPORTATION ON FLAT OR GONDOLA CARS | | | | | | |
| Milwaukee Electric Ry. & Light Co. | Slide | - | 15' 9" x 7' 0" x 3' 11" | - | - | - |
| Pennsylvania Railroad | Crane Lift ∮ | 99 | 7' 0" x 4' 3" x 8' 9" | 16000 | 237 | 3,150 |
| Pennsylvania Railroad | Crane Lift ∮ | 1 | 7' 0" x 4' 3" x 8' 9" | 16000 | 230 | 3,010 |
| Pennsylvania Railroad | Crane Lift ∮ | 1 | 7' 0" x 4' 3" x 8' 9" | 16000 | 230 | 3,455 |
| Pennsylvania Railroad | Crane Lift ∮ | 1 | 7' 0" x 4' 3" x 8' 9" | 16000 | 230 | 3,600 |
| Pennsylvania Railroad | Crane Lift ∮ | 6 | 7' 0" x 4' 3" x 8' 0" | 16000 | 220 | 3,000 |
| Youngstown Steel Door Co. | Crane Lift ∮ | - | 7' 0" x 4' 3" x 7' 11⅜" | 16000 | 220 | 2,015 |
| New York Central Railroad | Crane Lift ∮ | 6,021 | 7' 2⅜"x 4' 8-3/4"x8'2-1/8" | 11000 | 209 | 2,300 |
| New York Central Railroad | Crane Lift ∮ | 2,556 | 7' 2⅜"x 4' 8-3/4"x8'2-1/8" | 11000 | 209 | 3,000 |
| Youngstown Steel Door Co. | Crane Lift ∮ | - | | | 134 | 2,470 |
| Pennsylvania Railroad | Crane Lift ∮ | 204 | 7' 0" x 4' 3" x 6' 3⅜" | 16000 | 128 | 2,800 |
| Youngstown Steel Door Co. | Crane Lift ∮ | - | 4' 3" x 3' 6" x 7' 11⅜" | 8000 | 110 | 1,145 |
| Pennsylvania Railroad | Crane Lift ∮ | 12 | 7' 6" x 4' 3" x 3' 6" | 8000 | - | - |
| Pennsylvania Railroad | Crane Lift ∮ | 6 | 7' 6" x 4' 3" x 7' 0" | 16000 | - | - |
| CONTAINERS DESIGNED TO CARRY REFRIGERATED FREIGHT, FOR TRANSPORTATION ON FLAT OR GONDOLA CARS | | | | | | |
| R. V. Grayson | Lift Truck ∮ ∮ | - | 9' 5" x 7' 2" x 9'10-3/4" | - | 288 | 3,800 |
| The L.C.L. Corporation | Lift Truck ∮ ∮ | 4 | 9' 3-3/8"x 7' 2⅛"x 9' 4" | - | 260 | 3,200 |
| CONTAINERS DESIGNED TO CARRY ORDINARY FREIGHT, FOR TRANSPORTATION IN BOX CARS | | | | | | |
| C.G. Stetson (Fidelity Storage & Transfer Co. ) | Lift Truck | - | 7' 6" x 4' 0" x 6' 6" | 3250 | 180 | 1,700 |
| Church Freight Service, Inc. | Roll | 50 | 6' 0" x 2' 8" x 6' 6" | 2500 | 90 | 400 |
| Boston & Maine Railroad | Roll | - | 5' 6" x 3' 6" x 4' 0" | 3000 | 77 | 554 |
| Boston & Maine Railroad | Roll | - | 4' 6" x 3' 4" x 3' 8" | 2100 | 55 | 314 |
| CONTAINERS DESIGNED TO CARRY REFRIGERATED FREIGHT, FOR TRANSPORTATION IN BOX CARS | | | | | | |
| Church Freight Service, Inc. | Roll | 50 | 6' 0" x 2' 8" x 6' 6" | 2500 | 80 | 700 |

* Aluminum construction.
∮ Also arranged for crane lift.
∮ Experimental.
∮ For brick, etc.
∮ For lime, etc.
** Open top.

SECTION 84. WEIGHT

Analysis 84.1 Rail Freight Car Characteristics - 1933

| TYPE OF CAR | FREIGHT CARS NUMBER | % OF TOTAL | AVERAGE TARE WEIGHT TONS | AVERAGE LOAD LIMIT TONS | AVERAGE CAPACITY CUBIC FEET |
|---|---|---|---|---|---|
| ALL CARS | 2,417,797 | 100.0 | 21.5 | 55.6 | 2,247 |
| BOX | 1,061,806 | 43.9 | 21.3 | 50.5 | 2,878 |
| House | 851,009 | 35.2 | 20.5 | 50.6 | 2,755 |
| Automobile | 135,155 | 5.6 | 25.5 | 53.4 | 3,598 |
| Furniture | 32,731 | 1.3 | 25.5 | 51.7 | 3,716 |
| Ventilated | 42,911 | 1.8 | 21.5 | 38.0 | 2,447 |
| REFRIGERATOR | 151,139 | 6.3 | 27.5 | 38.2 | 1,948 |
| POULTRY AND STOCK | 85,981 | 3.6 | 19.5 | 45.5 | 2,485 |
| Poultry | 3,037 | 0.2 | 21.5 | 49.4 | 3,309 |
| Stock | 82,944 | 3.4 | 19.5 | 45.5 | 2,457 |
| OPEN TOP | 885,777 | 36.6 | 21.2 | 66.3 | 1,717 |
| Gondola | 427,947 | 17.7 | 21.5 | 64.5 | 1,531 |
| Hopper | 457,830 | 18.9 | 21.0 | 68.0 | 1,892 |
| TANK | 127,865 | 5.3 | 23.5 | 49.7 | 1,100 |
| FLAT | 105,229 | 4.3 | 17.0 | 56.5 | 1,980 |

Included in above enumeration are private cars as follows:
Tank, 117,791; Poultry, 2,807; Refrigerator, 131,072.

Source: Section of Car Pooling Study and the Official Railway Equipment Register.



Analysis 85.1 Distribution of Rail Traffic Among Types of Equipment - December 13, 1933

| COMMODITY GROUP | PERCENTAGE OF COMMODITY TON MILES CARRIED: BOX | REFRIGERATOR | VENTILATED BOX | POULTRY AND STOCK | GONDOLA | HOPPER | TANK | FLAT CAR |
|---|---|---|---|---|---|---|---|---|
| ALL COMMODITIES | 31% | 11% | *% | 2% | 18% | 21% | 9% | 1% |
| I ROUGH MATERIAL | 20% | - | - | - | 59% | 16% | - | 5% |
| Sand, Stone and Gravel | 20 | - | - | - | 59 | 16 | - | 5 |
| II RAW MATERIAL | 23% | 11% | *% | 1% | 23% | 31% | *% | 2% |
| Bulk Grain and Beets | 95 | * | * | - | 4 | 1 | - | - |
| Perishables | 2 | 98 | 1 | - | - | - | - | - |
| Live Animals | 14 | - | - | 86 | - | - | - | - |
| Coal and Coke | 5 | - | - | - | 38 | 57 | - | - |
| Ores | 58 | - | - | - | 17 | 25 | - | - |
| Sulphur and Sulphuric Acid | 70 | - | - | - | 15 | 15 | - | - |
| Forests Products | 79 | - | 1 | * | 5 | * | * | 14 |
| III SEMIPROCESSED MATERIAL | 100% | - | *% | - | - | - | - | - |
| Cotton, Hay and Tobacco | 100 | - | * | - | - | - | - | - |
| Paper and Products | 100 | - | - | - | - | - | - | - |
| IV NECESSARIES | 60% | 33% | *% | - | 1% | - | 6% | - |
| Cereals | 99 | 1 | * | - | - | - | - | - |
| Miscellaneous Farm Products | 76 | 17 | 2 | - | 3 | - | 3 | - |
| Edible Animal Products | 2 | 96 | - | - | - | - | 3 | - |
| Oils - Vegetable and Animal | 48 | 8 | 1 | - | - | - | 42 | - |
| Manufactured Food | 65 | 27 | * | - | 1 | - | 7 | - |
| Textiles and Leather | 100 | - | 1 | - | - | - | - | - |
| VI AUXILIARIES | 35% | 2% | *% | *% | 2% | 1% | 59% | 1% |
| Petroleum and Products | 4 | - | - | - | 1 | - | 95 | * |
| Building Materials | 93 | - | - | - | 5 | 2 | - | * |
| Chemicals | 66 | - | - | - | - | - | 34 | - |
| Miscellaneous | 69 | 8 | 1 | 2 | 4 | 2 | 12 | 2 |
| VII ACCESSORIES | 61% | - | - | - | 34% | 1% | - | 4% |
| Iron and Steel | 45 | - | - | - | 50 | 2 | - | 3 |
| Other Metals | 100 | - | - | - | * | - | - | - |
| Appliances | 87 | - | - | - | 3 | - | - | 10 |
| Glass and Tile | 99 | - | - | - | - | - | - | 1 |

* Less than ½%

SECTION 89. MOBILITY

Analysis 89.1 Rail Car Service by Type of Equipment - December 13, 1933

| | ALL CARS C.L. | ALL CARS L.C.L. | BOX C.L. | BOX L.C.L. | REFRIGERATOR | POULTRY AND STOCK | GONDOLA | HOPPER | TANK | FLAT CAR |
|---|---|---|---|---|---|---|---|---|---|---|
| **CARS OWNED AND PERCENTAGES BY TYPES** | | | | | | | | | | |
| Total | 2,417,795 | | 43.92% | | 6.25% | 3.56% | 17.70%* | 18.94%# | 5.29% | 4.34% |
| Carrier | 2,166,127 | | 49.02 | | .92 | 3.84 | 19.76 | 21.14 | .47 | 4.85 |
| Private | 251,670 | | - | | 52.08 | 1.12 | - | - | 46.80 | - |
| **PERCENTAGE OF TOTAL CAR MILES** | | | | | | | | | | |
| Car Load | 100.00% | | 37.42% | -% | 25.19% | 5.32% | 10.85% | 11.39% | 8.21% | 1.62% |
| Less Car Load | - | 100.00% | | - 81.3% | 16.89% | | 28% | - | - | 1.70% |
| **AVERAGE HAUL (MILES)** | 375.5 | 199.1 | 425.9 | 198.1 | 1,168.6 | 385.8 | 208.8 | 212.1 | 263.2 | 178.7 |
| **AVERAGE LOAD (TONS)** | 28.2 | - | 27.2 | - | 14.9 | 11.9 | 46.0 | 52.0 | 29.6 | 19.8 |
| **AVERAGE REVENUE** | | | | | | | | | | |
| Per Car | $ 91.28 | - | $ 64.96 | - | $ 169.59 | $130.40 | $81.92 | $92.44 | $118.09 | $59.92 |
| Per Ton | 3.48 | - | 4.59 | - | 15.96 | 6.46 | 1.75 | 1.78 | 3.82 | 2.14 |
| Per Car Mile | .276 | - | .208 | - | .182 | .200 | .385 | .436 | .430 | .237 |
| Per Ton Mile | .012 | - | .011 | - | .014 | .017 | .008 | .008 | .015 | .012 |
| Per Equated Ton Mile | .006 | - | .006 | - | .008 | .009 | .005 | .005 | .008 | .007 |
| **AVERAGE CAR DAYS IN TRANSIT** | | | | | | | | | | |
| TOTAL | 6.00 | 1.77 | 6.08 | 1.76 | 5.59 | 2.00 | 6.29 | 7.09 | 4.65 | 4.82 |
| PATRON | | | | | | | | | | |
| Total | 2.85 | .36 | 2.61 | .37 | 1.82 | .48 | 3.30 | 3.81 | 2.21 | 2.30 |
| Origin | 1.42 | .25 | 1.20 | .25 | .64 | .38 | 1.90 | 2.01 | 1.01 | 1.21 |
| Destination | 1.43 | .11 | 1.41 | .12 | 1.18 | .10 | 1.40 | 1.80 | 1.20 | 1.09 |
| CARRIER | | | | | | | | | | |
| Total | 3.15 | 1.41 | 3.47 | 1.39 | 3.77 | 1.52 | 2.99 | 3.28 | 2.44 | 2.52 |
| Origin | .47 | .46 | .56 | .46 | .30 | .15 | .52 | .53 | .41 | .63 |
| Intermediate | 1.11 | .22 | 1.16 | .22 | 1.19 | .48 | 1.03 | 1.41 | .87 | .76 |
| Destination | .62 | .29 | .73 | .29 | .39 | .10 | .76 | .61 | .45 | .48 |
| Road | .95 | .44 | 1.02 | .42 | 1.89 | .79 | .68 | .73 | .71 | .65 |
| **COMPARATIVE DETENTION** | | | | | | | | | | |
| Patron | 47% | 20% | 43% | 21% | 33% | 31% | 52% | 54% | 48% | 48% |
| Carrier | | | | | | | | | | |
| Total | 53% | 80% | 57% | 79% | 67% | 69% | 48% | 46% | 52% | 52% |
| Yard | 37 | 55 | 40 | 55 | 33 | 30 | 37 | 36 | 37 | 39 |
| Road | 16 | 25 | 17 | 24 | 34 | 39 | 11 | 10 | 15 | 13 |
| **MILES PER CAR DAY** | | | | | | | | | | |
| Overall | 63 | 112 | 66 | 105 | 166 | 193 | 34 | 30 | 59 | 52 |
| Carrier | | | | | | | | | | |
| Total | 119 | 141 | 115 | 133 | 247 | 257 | 73 | 65 | 111 | 85 |
| Road | 395 | 447 | 390 | 441 | 493 | 487 | 314 | 291 | 388 | 389 |
| **CAR MILES** | | | | | | | | | | |
| Actual (Millions) | 18.5 | 3.4 | 6.9 | 2.7 | 5.2 | 1.0 | 2.0 | 2.1 | 1.5 | .3 |
| Direct (Millions) | 16.7 | 3.1 | 6.3 | - | 4.8 | .9 | 1.8 | 1.9 | 1.3 | .3 |
| **CIRCUITY** | 10.8% | 7.0% | 8.7% | - | 9.0% | 8.4% | 11.2% | 8.6% | 14.6% | 10.8% |

* Does not include Private Cars
\# Includes Private Gondola Cars



SECTION 90. UTILITY

Analysis 90.1 Rail Freight Car Performance - 1932

| OPERATING DISTRICT | NET TON MILES | AVERAGE TON MILES PER LOADED CAR MILE EQUATED TON MILES | CAR TON MILES | GROSS TON MILES |
|---|---|---|---|---|
| UNITED STATES | 23 | 44 | 63 | 72 |
| NEW ENGLAND | 17 | 33 | 53 | 62 |
| Connecticut | 17 | 33 | 52 | 61 |
| Maine | 19 | 37 | 57 | 66 |
| Massachusetts | 17 | 33 | 53 | 62 |
| New Hampshire | 18 | 35 | 53 | 61 |
| Rhode Island | 16 | 31 | 53 | 61 |
| Vermont | 15 | 29 | 44 | 53 |
| TRUNK LINE | 26 | 50 | 65 | 74 |
| Delaware | 18 | 35 | 59 | 67 |
| Maryland | 26 | 50 | 65 | 75 |
| New Jersey | 29 | 56 | 68 | 78 |
| New York | 22 | 43 | 61 | 70 |
| Pennsylvania | 28 | 54 | 67 | 77 |
| CENTRAL | 24 | 46 | 65 | 74 |
| Illinois | 22 | 43 | 63 | 72 |
| Indiana | 22 | 43 | 63 | 72 |
| Michigan | 20 | 39 | 61 | 71 |
| Ohio | 27 | 52 | 67 | 77 |
| POCAHONTAS | 38 | 74 | 80 | 90 |
| Virginia | 36 | 70 | 78 | 87 |
| West Virginia | 40 | 77 | 82 | 92 |
| SOUTHEASTERN | 23 | 44 | 61 | 71 |
| Alabama | 21 | 41 | 58 | 69 |
| Florida | 23 | 44 | 79 | 97 |
| Georgia | 18 | 35 | 58 | 68 |
| Kentucky | 32 | 62 | 72 | 80 |
| Mississippi | 19 | 37 | 56 | 64 |
| North Carolina | 17 | 33 | 52 | 62 |
| South Carolina | 20 | 39 | 56 | 67 |
| Tennessee | 22 | 43 | 59 | 69 |
| WESTERN TRUNK LINE | 19 | 37 | 60 | 69 |
| Iowa | 19 | 37 | 61 | 71 |
| Kansas | 20 | 39 | 61 | 70 |
| Minnesota | 22 | 43 | 61 | 71 |
| Missouri | 19 | 37 | 60 | 69 |
| Nebraska | 18 | 35 | 59 | 69 |
| North Dakota | 20 | 39 | 57 | 67 |
| South Dakota | 20 | 39 | 60 | 72 |
| Wisconsin | 19 | 37 | 58 | 67 |
| SOUTHWESTERN | 20 | 39 | 61 | 71 |
| Arkansas | 20 | 39 | 59 | 65 |
| Louisiana | 23 | 44 | 62 | 70 |
| New Mexico | 18 | 35 | 65 | 74 |
| Oklahoma | 21 | 41 | 64 | 75 |
| Texas | 19 | 37 | 61 | 71 |
| PACIFIC NORTHWEST | 20 | 39 | 60 | 70 |
| Idaho | 20 | 39 | 60 | 71 |
| Montana | 20 | 39 | 60 | 70 |
| Oregon | 20 | 39 | 57 | 69 |
| Washington | 22 | 43 | 62 | 75 |
| Wyoming | 17 | 33 | 59 | 68 |
| PACIFIC SOUTHWEST | 17 | 33 | 55 | 65 |
| Arizona | 17 | 33 | 61 | 74 |
| California | 19 | 37 | 60 | 72 |
| Colorado | 11 | 21 | 34 | 43 |
| Nevada | 19 | 37 | 61 | 68 |
| Utah | 18 | 35 | 57 | 69 |

Analysis 90.2 Utilization of Box Car Capacity* - Non-manufactures - 1933

| ICC COMMODITY NO. | COMMODITIES (ICC CLASSIFICATION) | PER CENT OF TOTAL CARS | PER CENT OF TOTAL TONS | DENSITY POUND PER CUBIC FOOT | STOWAGE FACTOR CUBIC FEET PER TON | VOLUME CAR CAPACITY ‡ (TONS) | FREIGHT CAR AVERAGE LOAD (TONS) | UTILIZATION WEIGHT § | UTILIZATION VOLUME ‖ | CONTAINER TYPE# | CONTAINER AVERAGE LOAD (TONS) ** | CONTAINER NUMBER PER CAR ## | CONTAINER UTILIZATION WEIGHT // | CONTAINER UTILIZATION VOLUME ‖‖ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ORDINARY BOX CAR | | | | | | | | | | | | | |
| | (2,755 cu.ft.-50.6 Tons) | 18.07 | 14.07 | 36.6 | 54.7 | 50.4 | 27.6 | 54% | 55% | - | 9.2 | 2.39 | 66% | 100% |
| 10 | Wheat | 1.34 | 2.41 | 48 | 41.7 | 66.2 | 44.2 | 87 | 67 | C5 | 12.0 | 3.68 | 96 | 100 |
| 20 | Corn | 1.55 | 1.79 | 45 | 44.5 | 62.0 | 41.1 | 81 | 67 | C5 | 11.2 | 3.67 | 90 | 100 |
| 30 | Oats | 0.54 | 0.49 | 26 | 77.0 | 35.8 | 32.1 | 64 | 89 | C5 | 6.5 | 4.94 | 52 | 100 |
| 40 | Barley and Rye | 0.29 | 0.33 | 37 | 54.1 | 51.0 | 40.2 | 80 | 79 | C5 | 9.2 | 4.37 | 74 | 100 |
| 41 | Rice | 0.12 | 0.09 | 40 | 50.0 | 55.1 | 28.4 | 56 | 53 | C5 | 10.0 | 5.51 | 80 | 100 |
| 42 | Grain, NOS | 0.01 | 0.01 | 34 | 58.9 | 46.8 | 27.0 | 53 | 59 | C5 | 8.5 | 3.18 | 68 | 100 |
| 50 | Flour, Wheat | 1.77 | 1.21 | 42 | 47.7 | 57.9 | 24.3 | 48% | 43% | C5 | 10.5 | 2.31 | 84% | 100% |
| 51 | Meal, Corn | 0.07 | 0.04 | 36 | 55.6 | 49.6 | 20.5 | 41 | 42 | C5 | 9.0 | 2.28 | 72 | 100 |
| 52 | Flour and Meal, Edible, NOS | 0.10 | 0.06 | 36 | 55.6 | 49.6 | 22.1 | 44 | 45 | C5 | 9.0 | 4.45 | 72 | 100 |
| 60 | Cereal Foods | 0.21 | 0.11 | 17 | 117.7 | 23.4 | 18.2 | 36 | 77 | C5 | 4.2 | 4.34 | 34 | 100 |
| 61 | Mill Products, NOS | 1.40 | 0.88 | 30 | 66.7 | 41.3 | 22.4 | 44 | 53 | C5 | 7.5 | 2.99 | 60 | 100 |
| 70 | Hay and Alfalfa | 0.48 | 0.18 | 14 | 142.8 | 19.3 | 12.9 | 26% | 67% | C12 | 8.4 | 1.54 | 22% | 100% |
| 71 | Straw | 0.10 | 0.04 | 11 | 181.8 | 15.0 | 13.7 | 27 | 91 | C12 | 6.6 | 2.08 | 18 | 100 |
| 80 | Tobacco, Leaf | 0.33 | 0.10 | 24 | 83.4 | 33.1 | 10.8 | 21 | 33 | C5 | 6.0 | 1.80 | 48 | 100 |
| 90 | Cotton in Bales | 1.13 | 0.45 | 20 | 100.0 | 27.6 | 14.0 | 28 | 50 | C5 | 5.0 | 2.80 | 40 | 100 |
| 91 | Cotton Linters, etc. | 0.09 | 0.05 | 15 | 133.4 | 20.7 | 18.6 | 37 | 90 | C5 | 3.7 | 5.03 | 30 | 100 |
| 100 | Cottonseed | 0.24 | 0.18 | 30 | 66.7 | 41.3 | 26.6 | 53 | 63 | C5 | 7.5 | 3.55 | 60 | 100 |
| 101 | Cottonseed Meal and Cake | 0.27 | 0.19 | 40 | 50.0 | 55.1 | 24.6 | 49 | 45 | C5 | 10.0 | 2.46 | 80 | 100 |
| 130 | Potatoes (except sweet) | 1.01 | 0.51 | 38 | 52.7 | 52.3 | 17.9 | 35% | 34% | C5 | 9.5 | 1.89 | 76% | 100% |
| 140 | Cabbage | 0.13 | 0.05 | 26 | 77.0 | 35.8 | 12.8 | 25 | 35 | C5 | 6.5 | 1.92 | 52 | 100 |
| 141 | Onions | 0.15 | 0.06 | 28 | 71.5 | 38.6 | 13.3 | 26 | 36 | C5 | 7.0 | 1.90 | 56 | 100 |
| 150 | Beans and Peas, Dried | 0.12 | 0.09 | 42 | 47.7 | 57.9 | 26.4 | 52 | 45 | C5 | 10.5 | 2.52 | 84 | 100 |
| 151 | Fruits, Dried | 0.09 | 0.07 | 39 | 51.3 | 53.7 | 27.1 | 54 | 51 | C5 | 9.7 | 2.79 | 78 | 100 |
| 152 | Vegetables, Dry, NOS | 0.07 | 0.02 | 27 | 74.1 | 37.2 | 13.0 | 26 | 35 | C5 | 6.7 | 1.94 | 54 | 100 |
| 160 | Vegetable Oil and Cake | 0.05 | 0.04 | 40 | 50.0 | 55.1 | 24.2 | 48 | 45 | C5 | 10.0 | 2.42 | 80 | 100 |
| 161 | Peanuts | 0.08 | 0.03 | 17 | 117.7 | 23.4 | 15.7 | 31 | 67 | C5 | 4.2 | 3.74 | 34 | 100 |
| 162 | Flaxseed | 0.03 | 0.03 | 39 | 51.3 | 53.7 | 36.9 | 73 | 69 | C5 | 9.7 | 3.81 | 78 | 100 |
| 163 | Sugar Beets | 0.75 | 0.97 | 44 | 45.5 | 60.6 | 45.9 | 91 | 75 | C5 | 11.0 | 4.17 | 88 | 100 |
| 164 | Products of Agriculture, NOS | 0.63 | 0.45 | 28 | 71.5 | 38.6 | 25.0 | 49 | 64 | C5 | 7.0 | 3.57 | 56 | 100 |
| 260 | Wool | 0.13 | 0.05 | 15 | 133.4 | 20.7 | 13.2 | 26% | 64% | C5 | 3.7 | 3.57 | 30% | 100% |
| 270 | Hides, Green | 0.13 | 0.09 | 41 | 48.8 | 56.5 | 23.1 | 46 | 41 | C5 | 10.2 | 2.26 | 82 | 100 |
| 271 | Leather | 0.00 | 0.02 | 25 | 80.0 | 34.4 | 18.0 | 36 | 52 | C5 | 6.2 | 2.90 | 50 | 100 |
| 280 | Fish or Sea-animal Oil | 0.00 | 0.01 | 37 | 54.1 | 51.0 | 28.3 | 56 | 55 | C5 | 9.2 | 3.08 | 74 | 100 |
| 282 | Animal Products, NOS | 0.24 | 0.14 | 32 | 62.5 | 44.1 | 20.9 | 41 | 47 | C5 | 8.0 | 2.62 | 64 | 100 |
| 380 | Salt | 0.48 | 0.40 | 50 | 40.0 | 68.9 | 29.5 | 58% | 42% | C5 | 12.5 | 2.36 | 100% | 100% |
| 430 | Lumber, Shingles, Lath | 2.39 | 1.80 | 25 | 80.0 | 34.4 | 26.8 | 53 | 78 | (a) | 12.1 | 2.22 | 42 | 100 |
| 431 | Box, Crate, Cooperage | 0.44 | 0.29 | 24 | 83.4 | 33.1 | 23.4 | 47 | 71 | C5 | 6.0 | 3.90 | 48 | 100 |
| 432 | Veneer and Builtup Wood | 0.03 | 0.02 | 25 | 80.0 | 34.4 | 23.7 | 47 | 69 | C12 | 15.0 | 1.58 | 40 | 100 |
| 440 | Rosin | 0.06 | 0.04 | 40 | 50.0 | 55.1 | 21.9 | 43 | 40 | C5 | 10.0 | 2.19 | 80 | 100 |
| 441 | Turpentine | 0.01 | 0.01 | 37 | 54.1 | 51.0 | 23.8 | 47 | 46 | C5 | 9.2 | 2.59 | 74 | 100 |
| 442 | Crude Rubber | 0.08 | 0.06 | 33 | 60.6 | 45.5 | 33.4 | 66 | 73 | C5 | 8.2 | 4.08 | 66 | 100 |
| 443 | Forest Products, NOS | 0.33 | 0.21 | 20 | 100.0 | 27.6 | 21.8 | 43 | 80 | (b) | 7.3 | 2.98 | 35 | 100 |
| | § Utilization, weight or Volume | | | | | | | 66% | | | | | 100% | |

(a) 1/3 in C5, 2/3 in C12. (b) 2/3 in C5, 1/3 in C12.

* Based on average weight capacity and average volume capacity of cars, Analysis 84.1; per cent of total cars and total tons terminated, year 1933, ICC Statistics.

\# C5 is 500 cubic foot, 12.5 ton capacity container; C12 is 1,200 cubic foot, ton capacity (12.5 ton capacity on highway) containers.

‡ Cubic feet (each type of car) divided by stowage factor.

§ Average load divided by average weight capacity of car.

‖ Average load divided by average volume capacity of car.

** Density of each commodity multiplied by volume capacity of container (500 or 1,200 cu.ft.) with maximum allowable load of 12.5 tons except for C12 container which can carry 37.5 tons on railroads.

## Average load per car divided by average load per container.

// Average load divided by 12.5 tons for C5 container and by 37.5 tons for C12 container.

‖‖ Average load multiplied by stowage factor and the product divided by volume capacity of container (500 or 1,200 cu. ft.)



Analysis 90.3 Utilization of Box Car Capacity* - Manufactures - 1933

| ICC COMMODITY NO. | COMMODITIES (ICC CLASSIFICATION) | PER CENT OF TOTAL CARS | PER CENT OF TOTAL TONS | DENSITY POUND PER CUBIC FOOT | STOWAGE FACTOR CUBIC FEET PER TON | VOLUME CAR CAPACITY ‡ (TONS) | FREIGHT CAR AVERAGE LOAD (TONS) | UTILIZATION WEIGHT § | UTILIZATION VOLUME ‖ | CONTAINER TYPE# | CONTAINER AVERAGE LOAD (TONS) ** | CONTAINER NUMBER PER CAR ## | CONTAINER UTILIZATION WEIGHT // | CONTAINER UTILIZATION VOLUME ‖‖ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ORDINARY BOX CAR | | | | | | | | | | | | | |
| | (2,755 cu.ft.-50.6 Tons) | 16.42 | 11.02 | 35.5 | 56.4 | 48.9 | 23.8 | 47% | 49% | - | 6.4 | 3.73 | 57% | 96% |
| 452 | Lubricating Oils | 0.58 | 0.36 | 38 | 52.7 | 52.3 | 22.2 | 44 | 42 | C5 | 9.5 | 2.34 | 77 | 100 |
| 453 | Petroleum Products, NOS | 0.04 | 0.03 | 38 | 52.7 | 52.3 | 23.9 | 47 | 45 | C5 | 9.5 | 2.52 | 77 | 100 |
| 462 | Vebetable Oils, NOS | 0.07 | 0.06 | 38 | 52.7 | 52.3 | 29.6 | 58 | 55 | Tank | - | - | - | - |
| 470 | Sugar (Beets or Cane) | 0.59 | 0.52 | 43 | 46.5 | 59.2 | 31.7 | 63 | 54 | C5 | 10.7 | 2.97 | 86 | 100 |
| 471 | Sirups and Molasses | 0.10 | 0.09 | 50 | 40.0 | 68.9 | 31.4 | 62 | 46 | C5 | 12.5 | 2.51 | 100 | 100 |
| 512 | Nails and Wire | 0.27 | 0.22 | 67 | 29.9 | 92.1 | 25.5 | 50 | 28 | C5 | 12.5 | 2.04 | 100 | 75 |
| 521 | Copper, Brass and Bronze, Bar, Sheet and Pipe | 0.03 | 0.02 | 180 | 11.1 | 248.2 | 28.6 | 57 | 12 | C12 | 28.6 | 1.00 | 76 | 27 |
| 540 | Cement, Portland, etc. | 1.31 | 1.39 | 67 | 29.9 | 92.1 | 37.7 | 74 | 41 | C5 | 12.5 | 3.02 | 100 | 75 |
| 551 | Brick, Building Tile | 0.36 | 0.37 | 86 | 25.0 | 110.2 | 37.0 | 73 | 34 | C5 | 12.5 | 2.96 | 100 | 63 |
| 552 | Artificial Stone, NOS | 0.02 | 0.01 | 110 | 18.2 | 151.5 | 29.6 | 58 | 19 | C5 | 12.5 | 2.37 | 100 | 45 |
| 560 | Lime, Common | 0.25 | 0.17 | 50 | 40.0 | 68.9 | 24.2 | 48 | 36 | C5 | 12.5 | 1.94 | 100 | 100 |
| 561 | Plaster | 0.11 | 0.08 | 50 | 40.0 | 68.9 | 24.9 | 49 | 36 | C5 | 12.5 | 1.99 | 100 | 100 |
| 570 | Sewer Pipe and Drain Tile | 0.16 | 0.08 | 28 | 71.5 | 38.6 | 16.9 | 33 | 43 | C5 | 7.0 | 2.41 | 56 | 100 |
| 581 | Vehicles, Horse-drawn | 0.01 | 0.00 | 13 | 153.8 | 17.9 | 12.6 | 25 | 69 | C12 | 7.8 | 1.62 | 21 | 100 |
| 592 | Autos and Trucks, K.D. | 0.50 | 0.26 | 31 | 64.6 | 42.7 | 18.5 | 37 | 42 | C12 | 18.6 | 1.00 | 50 | 100 |
| 593 | Auto and Truck Tires | 0.10 | 0.04 | 12 | 166.8 | 16.5 | 14.4 | 28 | 87 | C12 | 7.2 | 2.00 | 19 | 100 |
| 640 | Fertilizers, NOS | 0.97 | 0.76 | 50 | 40.0 | 68.9 | 27.8 | 55 | 40 | C5 | 12.5 | 2.22 | 100 | 100 |
| 650 | Newsprint Paper | 0.22 | 0.16 | 33 | 60.6 | 45.5 | 25.6 | 51 | 57 | (d) | 14.0 | 1.83 | 56 | 100 |
| 651 | Printing Papers, NOS | 0.29 | 0.19 | 43 | 46.5 | 59.2 | 22.9 | 45 | 40 | C5 | 10.7 | 2.14 | 86 | 100 |
| 660 | Alcohol | 0.07 | 0.04 | 35 | 57.2 | - | 21.1 | 42 | 43 | C5 | 8.7 | 2.43 | 67 | 100 |
| 662 | Explosives, NOS | 0.04 | 0.02 | 50 | 40.0 | 68.9 | 16.8 | 33 | 24 | C5 | 12.5 | 1.34 | 100 | 100 |
| 670 | Cotton Cloth and Fabric | 0.18 | 0.05 | 33 | 60.6 | 45.5 | 10.3 | 20 | 21 | C5 | 8.2 | 1.25 | 66 | 100 |
| 671 | Bagging and Bags | 0.06 | 0.03 | 33 | 60.6 | 45.5 | 17.7 | 35 | 39 | C5 | 8.2 | 2.16 | 66 | 100 |
| 680 | Canned Food Products | 0.74 | 0.48 | 41 | 48.8 | 56.5 | 23.2 | 46 | 41 | C5 | 10.2 | 2.28 | 82 | 100 |
| 690 | Tobacco, Manufactured | 0.05 | 0.03 | 18 | 111.0 | 24.7 | 18.3 | 36 | 74 | C5 | 4.5 | 4.07 | 36 | 100 |
| 691 | Paint and Varnish | 0.05 | 0.03 | 54 | 37.1 | 74.4 | 21.5 | 42 | 30 | C5 | 12.5 | 1.72 | 100 | 93 |
| 694 | Paper Bags and Wrappers | 0.27 | 0.17 | 29 | 69.0 | 39.9 | 22.5 | 44 | 55 | C5 | 7.2 | 3.12 | 19 | 100 |
| 695 | Paperboard, Pulpboard | 0.46 | 0.27 | 25 | 80.0 | 34.4 | 21.2 | 42 | 62 | C12 | 15.1 | 1.40 | 40 | 100 |
| 696 | Building Paper and Prepared Roofing | 0.26 | 0.16 | 42 | 47.7 | 57.9 | 22.2 | 44 | 38 | C5 | 10.5 | 2.11 | 84 | 100 |
| 697 | Building woodwork | 0.04 | 0.02 | 21 | 95.3 | 28.9 | 18.9 | 37 | 67 | C12 | 12.6 | 1.50 | 34 | 100 |
| 698 | Soap and Washing Powder | 0.22 | 0.13 | 45 | 44.5 | 62.0 | 21.4 | 42 | 35 | C5 | 11.2 | 1.91 | 90 | 100 |
| 699 | Glass, Flat | 0.05 | 0.04 | 75 | 26.7 | 103.3 | 31.9 | 63 | 31 | C5 | 12.5 | 2.55 | 100 | 67 |
| 700 | Glass, Bottles, Jars | 0.44 | 0.22 | 21 | 95.3 | 28.9 | 17.6 | 35 | 61 | C5 | 5.2 | 3.38 | 42 | 100 |
| 701 | Manufactures and Miscellaneous, NOS | 7.51 | 4.52 | 16 | 125.0 | 22.0 | 21.4 | 42 | 97 | C5 | 4.0 | 5.35 | 32 | 100 |
| | All Ordinary Box Cars | 34.49 | 25.09 | 36.1 | 55.4 | 49.7 | 25.8 | 51 | 52 | - | 7.7 | 3.34 | 62 | 98 |
| | § Utilization, Weight or Volume | | | | | | | 70% | | | | | 100% | |
| | AUTO BOX | | | | | | | | | | | | | |
| | (3,598 cu.ft.-53.4 Tons) | 0.94 | 0.16 | 4.1 | 48.8 | 7.4 | 6.1 | 11% | 82% | ab | - | - | - | - |
| 590 | Automobiles (Passenger) | 0.88 | 0.15 | 4 | 50.0 | 7.2 | 5.9 | 11 | 82 | ab | - | - | - | - |
| 591 | Auto-trucks | 0.06 | 0.01 | 5 | 40.0 | 9.0 | 8.1 | 15 | 90 | ab | - | - | - | - |
| | § Utilization, Weight or Volume | | | | | | | 83% | | | | | - | |
| | FURNITURE BOX | | | | | | | | | | | | | |
| | (3,716 cu.ft.-51.7 Tons) | 0.24 | 0.06 | 6.6 | 30.3 | 12.3 | 8.4 | 16% | 68% | - | 3.9 | 2.18 | 11% | 100% |
| 610 | Furniture, Metal | 0.04 | 0.01 | 9 | 22.2 | 16.7 | 10.7 | 20 | 64 | C12 | 5.4 | 1.98 | 14 | 100 |
| 611 | Furniture, Other | 0.20 | 0.05 | 6 | 33.4 | 11.1 | 8.0 | 15 | 72 | C12 | 3.6 | 2.22 | 10 | 100 |
| | § Utilization, Weight or Volume | | | | | | | 71% | | | | | 100% | |
| | ALL BOX CARS | | | | | | | | | | | | | |
| | (2,787 cu.ft.-50.7) | 35.67 | 25.31 | 35.8 | 55.9 | 49.9 | 25.2 | 50% | 50% | - | 7.7 | 3.33 | 62% | 98% |
| | § Utilization, Weight or Volume | | | | | | | 70% | | | | | 100% | |

* For General Notes see Analysis 90.2 (d) 1/2 in C5. 1/2 in C12. ab - Automobile box car, not in container.

SECTION 90. UTILITY

Analysis 90.4 Utilization of Capacity of Refrigerator, Stock, Poultry, etc. Cars* - 1933

| ICC COMMODITY NO. | COMMODITIES (ICC CLASSIFICATION) | PER CENT OF TOTAL CARS | PER CENT OF TOTAL TONS | DENSITY POUND PER CUBIC FOOT | STOWAGE FACTOR CUBIC FEET PER TON | FREIGHT CAR VOLUME CAR CAPACITY † (TONS) | FREIGHT CAR AVERAGE LOAD (TONS) | FREIGHT CAR UTILIZATION WEIGHT § | FREIGHT CAR UTILIZATION VOLUME ‡ | CONTAINER TYPE# | CONTAINER AVERAGE LOAD (TONS) ** | CONTAINER NUMBER PER CAR ## | CONTAINER UTILIZATION WEIGHT ++ | CONTAINER UTILIZATION VOLUME §§ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REFRIGERATOR (1,948 cu.ft. - 38.2 Tons) | 5.03 | 1.89 | 36.8 | 74.7 | 36.1 | 13.4 | 35% | 51% | - | 5.0 | 2.69 | 42% | 100% |
| 110 | Oranges and Grapefruits | 0.49 | 0.24 | 32 | 63.5 | 31.2 | 17.5 | 46 | 56 | 04 | 6.4 | 2.74 | 51 | 100 |
| 111 | Citrus Fruits, NOS | 0.06 | 0.03 | 32 | 63.5 | 31.2 | 15.2 | 40 | 50 | 04 | 6.4 | 2.38 | 51 | 100 |
| 120 | Apples, Fresh | 0.35 | 0.16 | 34 | 83.4 | 33.4 | 16.5 | 43 | 71 | 04 | 4.8 | 3.44 | 36 | 100 |
| 121 | Bananas | 0.37 | 0.08 | 17 | 117.7 | 36.5 | 10.7 | 28 | 69 | 04 | 3.4 | 3.18 | 27 | 100 |
| 122 | Berries, Fresh | 0.03 | 0.01 | 20 | 100.0 | 19.5 | 9.4 | 25 | 48 | 04 | 4.0 | 2.35 | 32 | 100 |
| 123 | Melons, NOS | 0.09 | 0.03 | 28 | 71.5 | 27.3 | 11.4 | 30 | 43 | 04 | 5.6 | 2.03 | 45 | 100 |
| 124 | Grapes, Fresh | 0.15 | 0.06 | 28 | 71.5 | 27.3 | 14.8 | 39 | 54 | 04 | 5.6 | 2.64 | 45 | 100 |
| 125 | Peaches, Fresh | 0.13 | 0.05 | 32 | 63.5 | 31.2 | 13.2 | 35 | 42 | 04 | 6.4 | 2.06 | 51 | 100 |
| 126 | Watermelons | 0.12 | 0.05 | 20 | 100.0 | 19.5 | 13.3 | 35 | 68 | 04 | 4.0 | 3.32 | 32 | 100 |
| 127 | Fruits, Domestic, NOS | 0.13 | 0.06 | 30 | 66.7 | 29.2 | 15.4 | 40 | 53 | 04 | 6.0 | 2.57 | 48 | 100 |
| 128 | Fruits, Tropical, NOS | 0.01 | 0.00 | 40 | 50.0 | 39.0 | 12.0 | 31 | 30 | 04 | 8.0 | 1.50 | 64 | 100 |
| 142 | Tomatoes | 0.11 | 0.04 | 29 | 69.0 | 28.3 | 11.5 | 30 | 41 | 04 | 5.8 | 1.98 | 56 | 100 |
| 143 | Vegetables, Fresh | 0.79 | 0.22 | 24 | 83.4 | 33.4 | 11.3 | 30 | 48 | 04 | 4.8 | 2.35 | 36 | 100 |
| 210 | Fresh Meats, NOS | 1.24 | 0.43 | 22 | 91.0 | 21.4 | 12.3 | 32 | 57 | 04 | 4.4 | 2.80 | 35 | 100 |
| 220 | Meats, Cured, etc. | 0.20 | 0.08 | 37 | 54.1 | 36.0 | 15.0 | 39 | 41 | 04 | 7.4 | 2.03 | 59 | 100 |
| 221 | Butterine, Margarine | 0.01 | 0.00 | 40 | 50.0 | 39.0 | 13.3 | 35 | 35 | 04 | 8.0 | 1.66 | 64 | 100 |
| 222 | Packinghouse Products, Edible, NOS | 0.32 | 0.14 | 29 | 69.0 | 28.3 | 16.3 | 43 | 59 | 04 | 5.8 | 2.81 | 56 | 100 |
| 231 | Poultry, Dressed | 0.13 | 0.04 | 26 | 77.0 | 25.3 | 11.9 | 31 | 46 | 04 | 5.2 | 2.29 | 42 | 100 |
| 240 | Eggs | 0.19 | 0.06 | 23 | 87.0 | 22.4 | 11.4 | 30 | 52 | 04 | 4.6 | 4.47 | 37 | 100 |
| 250 | Butter | 0.24 | 0.08 | 40 | 50.0 | 39.0 | 12.4 | 32 | 33 | 04 | 8.0 | 1.55 | 64 | 100 |
| 251 | Cheese | 0.06 | 0.03 | 35 | 57.2 | 34.1 | 14.3 | 37 | 43 | 04 | 7.0 | 2.04 | 56 | 100 |
| | § Utilization, Weight or Volume | | | | | | | 54% | | | | | 100% | |
| | STOCK (2,458 cu.ft. - 45.5 Tons) | 4.37 | 1.37 | 9.5 | 210.5 | 11.7 | 11.1 | 24% | 95% | - | 5.3 | 2.11 | 14% | 100% |
| 170 | Horses, Mules, etc. | 0.12 | 0.04 | 10 | 200.0 | 12.2 | 11.8 | 26 | 97 | C12 | 6.0 | 1.97 | 16 | 100 |
| 180 | Cattle and Calves, S.D. | 1.98 | 0.65 | 9 | 222.0 | 11.1 | 11.6 | 25 | 100 | C12 | 5.0 | 2.32 | 13 | 100 |
| 181 | Calves, Double-deck | 0.02 | 0.01 | 13 | 153.8 | 15.9 | 12.5 | 27 | 79 | C12 | 7.9 | 1.58 | 21 | 100 |
| 190 | Sheep and Goats, S.D. | 0.12 | 0.02 | 5 | 400.0 | 6.1 | 6.7 | 15 | 100 | C12 | 3.0 | 2.23 | 8 | 100 |
| 191 | Sheep and Goats, D.D. | 0.42 | 0.12 | 9 | 222.0 | 11.1 | 10.6 | 23 | 95 | C12 | 5.0 | 2.12 | 13 | 100 |
| 200 | Hogs, Single-deck | 0.73 | 0.17 | 7 | 286.0 | 8.6 | 8.2 | 18 | 95 | C12 | 4.2 | 1.95 | 11 | 100 |
| 201 | Hogs, Double-deck | 0.98 | 0.36 | 12 | 166.8 | 14.8 | 13.0 | 29 | 88 | C12 | 7.2 | 1.80 | 19 | 100 |
| 281 | Animals, Live, NOS | 0.00 | 0.00 | 9 | 222.0 | 11.1 | 11.0 | 24 | 100 | C12 | 5.0 | 2.32 | 13 | 100 |
| | § Utilization, Weight or Volume | | | | | | | 96% | | | | | 100% | |
| | POULTRY (3,309 cu.ft. - 49.4 Tons) | 0.05 | 0.01 | 7 | 286.0 | 11.6 | 9.7 | 20% | 84% | - | 4.2 | 2.31 | 11% | 100% |
| 230 | Poultry, Live | 0.05 | 0.01 | 7 | 286.0 | 11.6 | 9.7 | 20 | 84% | C12 | 4.2 | 2.31 | 11 | 100 |
| | § Utilization, Weight or Volume | | | | | | | 84% | | | | | 100% | |
| | 1/2 BOX AND 1/2 GONDOLA (2,143 cu.ft. - 57.5 Tons) | 4.00 | 3.55 | 121.5 | 16.5 | 129.9 | 31.4 | 55% | 24% | - | 23.0 | 1.41 | 79% | 54% |
| 402 | Wood (Fuel) | 0.25 | 0.22 | 32 | 62.5 | 34.3 | 30.2 | 53 | 88 | 05 | 8.0 | 3.77 | 64 | 100 |
| 410 | Ties, Railroad | 0.19 | 0.17 | 35 | 57.2 | 37.5 | 31.4 | 55 | 83 | flat | - | - | - | - |
| 420 | Pulpwood | 0.63 | 0.61 | 32 | 62.5 | 34.3 | 33.9 | 59 | 100 | C12 | 19.3 | 1.76 | 52 | 100 |
| 511 | Iron and Steel Pipe | 0.27 | 0.22 | 80 | 25.0 | 85.7 | 29.2 | 51 | 34 | C12 | 29.2 | 1.00 | 78 | 61 |
| 513 | Iron and Steel, Finished | 2.06 | 1.97 | 180 | 11.1 | 193.0 | 33.9 | 59 | 18 | C12 | 33.9 | 1.00 | 90 | 31 |
| 530 | Machinery and Boilers | 0.33 | 0.16 | 40 | 50.0 | 42.9 | 17.7 | 31 | 42 | (g) | 17.7 | 1.00 | 47 | 74 |
| 550 | Brick, Common | 0.13 | 0.13 | 120 | 16.6 | 129.0 | 36.3 | 63 | 28 | 05 | 12.5 | 2.90 | 100 | 42 |
| 580 | Agricultural Implements | 0.07 | 0.03 | 33 | 60.6 | 35.4 | 15.6 | 27 | 44 | (h) | 14.0 | 1.11 | 56 | 100 |
| 582 | Tractor and Parts | 0.04 | 0.02 | 25 | 80.0 | 26.8 | 15.1 | 26 | 56 | (d) | 10.6 | 1.42 | 42 | 100 |
| 583 | Railway Car Wheels, Axles and Trucks | 0.03 | 0.02 | 165 | 12.1 | 177.0 | 28.5 | 50 | 16 | (gon) | - | - | - | - |
| | §Utilization, Weight or Volume | | | | | | | 66% | | | | | 92% | |
| | 3/4 REFRIGERATOR AND 1/4 BOX (2,150 cu.ft. - 41.2 Tons) | 0.54 | 0.32 | 47 | 42.6 | 50.5 | 21.4 | 52% | 42% | - | 9.7 | 2.21 | 77% | 100% |
| 620 | Beverages | 0.33 | 0.17 | 38 | 52.7 | 40.8 | 18.3 | 44 | 45 | (j) | 8.5 | 2.16 | 68 | 100 |
| 630 | Ice | 0.21 | 0.15 | 57 | 35.1 | 61.3 | 26.3 | 64 | 42 | 04 | 11.4 | 2.30 | 91 | 100 |
| | § Utilization, Weight or Volume | | | | | | | 52% | | | | | 100% | |
| | 1/2 TANK AND 1/2 BOX (1,927 cu.ft. - 50.2 Tons) | 0.35 | 0.35 | 56 | 35.7 | 54.0 | 35.4 | 71% | 66% | tank | - | - | - | - |
| 370 | Asphalt | 0.35 | 0.35 | 56 | 35.8 | 53.8 | 35.4 | 71 | 66 | tank | - | - | - | - |
| | § utilization, Weight or Volume | | | | | | | 71% | | | | | | |

* For general notes see Analysis 90.2. (g) 2/3 on flat car, 1/3 in C12. (h) 1/2 on flat car, 1/4 in 05, 1-1/4 in C12. (i) 1/2 in 05, 1/2 in C12. (gon) - Gondola. (j) 1/2 in 04, 1/2 in 05. 04 is 400 cubic feet, 12.5 tons capacity insulated container.



SECTION 90 UTILITY

Analysis 90.5 Utilization of Open Top, Tank and Flat Cars* - 1933

| ICC COMMODITY NO. | COMMODITIES (ICC CLASSIFICATION) | PER CENT OF TOTAL CARS | PER CENT OF TOTAL TONS | DENSITY POUND PER CUBIC FOOT | STOWAGE FACTOR CUBIC FEET PER TON | FREIGHT CAR VOLUME CAR CAPACITY † (TONS) | FREIGHT CAR AVERAGE LOAD (TONS) | FREIGHT CAR UTILIZATION WEIGHT § | FREIGHT CAR UTILIZATION VOLUME ‡ | CONTAINER TYPE# | CONTAINER AVERAGE LOAD (TONS) ** | CONTAINER NUMBER PER CAR ## | CONTAINER UTILIZATION WEIGHT ++ | CONTAINER UTILIZATION VOLUME §§ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OPEN TOP (1,717 cu.ft. - 66.3 Tons) | 39.51 | 58.00 | 69.1 | 29.0 | 59.3 | 52.2 | 79% | 88% | - | 12.5 | 4.13 | 100% | 74% |
| 290 | Anthracite Coal | 5.77 | 8.25 | 53 | 37.8 | 45.4 | 50.8 | 77 | 111x | e | 12.5 | 4.06 | 100 | 95 |
| 300 | Bituminous Coal | 22.46 | 33.69 | 51 | 39.3 | 43.7 | 53.3 | 80 | 122x | f | 12.5 | 4.26 | 100 | 98 |
| 310 | Coke | 1.43 | 1.34 | 28 | 71.5 | 24.0 | 33.4 | 50 | 139x | o.t. | - | - | - | - |
| 320 | Iron Ore | 2.39 | 3.87 | 160 | 12.5 | 137.4 | 57.7 | 87 | 42 | o.t. | - | - | - | - |
| 330 | Copper Ore | 0.15 | 0.23 | 135 | 14.8 | 116.0 | 53.4 | 81 | 46 | o.t. | - | - | - | - |
| 331 | Lead Ore | 0.06 | 0.08 | 160 | 12.5 | 137.4 | 53.0 | 80 | 39 | o.t. | - | - | - | - |
| 332 | Zinc Ore | 0.10 | 0.14 | 135 | 14.8 | 116.0 | 50.5 | 76 | 44 | o.t. | - | - | - | - |
| 333 | Ores, NOS | 0.12 | 0.18 | 90 | 22.2 | 77.3 | 52.4 | 79 | 68 | o.t. | - | - | - | - |
| 350 | Gravel and Sand | 2.04 | 3.19 | 110 | 18.2 | 94.4 | 55.5 | 84 | 59 | 05 | 12.5 | 4.44 | 100 | 45 |
| 351 | Stone, Broken, Ground | 1.13 | 1.76 | 100 | 20.0 | 85.8 | 55.0 | 83 | 64 | 05 | 12.5 | 4.40 | 100 | 50 |
| 390 | Phosphate Rock, Crude | 0.38 | 0.56 | 65 | 30.8 | 55.8 | 52.1 | 79 | 94 | 05 | 12.5 | 4.17 | 100 | 77 |
| 391 | Sulphur (Brimstone) | 0.15 | 0.23 | 68 | 29.4 | 58.4 | 56.7 | 86 | 97 | 05 | 12.5 | 4.52 | 100 | 74 |
| 392 | Products of Mines, NOS | 1.62 | 2.30 | 77 | 26.0 | 66.0 | 50.6 | 76 | 77 | 05 | 12.5 | 4.05 | 100 | 65 |
| 490 | Iron, Pig | 0.26 | 0.39 | 225 | 8.9 | 193.0 | 54.5 | 82 | 28 | 05 | 12.5 | 4.36 | 100 | 27 |
| 491 | Iron and Steel, Rough | 0.24 | 0.34 | 225 | 8.9 | 193.0 | 51.0 | 77 | 26 | 05 | 12.5 | 4.08 | 100 | 27 |
| 500 | Rails, Fastenings, etc. | 0.07 | 0.08 | 180 | 11.1 | 154.7 | 39.8 | 60 | 26 | flat | - | - | - | - |
| 510 | Cast Iron Pipe | 0.09 | 0.06 | 60 | 33.3 | 51.6 | 23.8 | 36 | 46 | C12 | 23.8 | 1.00 | 63 | 46 |
| 520 | Copper: Ingot, Pig, etc. | 0.03 | 0.03 | 210 | 9.5 | 181.0 | 44.6 | 67 | 25 | 05 | 12.5 | 3.57 | 100 | 24 |
| 522 | Lead and Zinc: Ingot, etc. | 0.09 | 0.11 | 225 | 8.9 | 193.0 | 42.9 | 65 | 22 | 05 | 12.5 | 3.43 | 100 | 27 |
| 523 | Aluminum: Ingot, Pig | 0.01 | 0.00 | 115 | 17.4 | 98.7 | 25.0 | 38 | 25 | 05 | 12.5 | 2.00 | 100 | 19 |
| 692 | Furnace Slag | 0.18 | 0.29 | 66 | 30.3 | 56.7 | 56.9 | 86 | 100 | 05 | 12.5 | 4.55 | 100 | 76 |
| 693 | Scrap: Iron and Steel | 0.74 | 0.88 | 145 | 13.8 | 124.5 | 41.9 | 63 | 34 | 05 | 12.5 | 3.35 | 100 | 35 |
| | § Utilization, Weight or Volume | | | | | | | 95% | | | | | 100% | |
| | TANK (1,100 cu.ft. - 49.7 Tons) | 8.58 | 7.15 | 55.6 | 36.0 | 30.6 | 29.6 | 60% | 97% | tank | - | - | - | - |
| 360 | Petroleum, Crude | 0.71 | 0.69 | 55 | 36.4 | 30.2 | 34.2 | 69 | 113x | tank | - | - | - | - |
| 450 | Petroleum, Refined | 6.26 | 4.95 | 55 | 36.4 | 30.2 | 28.1 | 57 | 93 | tank | - | - | - | - |
| 451 | Fuel and Road Oil | 1.38 | 1.30 | 58 | 34.5 | 31.9 | 33.4 | 67 | 105x | tank | - | - | - | - |
| 460 | Cottonseed Oil | 0.14 | 0.11 | 55 | 36.4 | 30.2 | 29.6 | 60 | 98 | tank | - | - | - | - |
| 461 | Linseed Oil | 0.03 | 0.02 | 50 | 40.0 | 27.5 | 27.1 | 55 | 98 | tank | - | - | - | - |
| 472 | Molasses, Blackstrap | 0.06 | 0.08 | 55 | 36.4 | 30.2 | 47.3 | 95 | 156x | tank | - | - | - | - |
| | § Utilization, Weight or Volume | | | | | | | 95% | | | | | | |
| | FLAT (1,980 cu.ft. - 56.5 Tons) | 1.75 | 1.84 | 63.5 | 31.5 | 62.8 | 37.3 | 66% | 59% | flat | 18.0 | 1.53 | 48% | 100% |
| 352 | Stone, Rough, NOS | 0.24 | 0.35 | 160 | 12.5 | 158.5 | 52.9 | 94 | 33 | flat | - | - | - | - |
| 353 | Stone, Finished, NOS | 0.07 | 0.08 | 135 | 12.9 | 153.5 | 33.1 | 59 | 21 | flat | - | - | - | - |
| 400 | Logs | 1.19 | 1.23 | 37 | 54.1 | 36.7 | 36.7 | 65 | 100 | flat | - | - | - | - |
| 401 | Posts, Poles and Piling | 0.25 | 0.20 | 30 | 66.7 | 29.7 | 27.6 | 49 | 94 | c | 18.0 | 1.53 | 48 | 100 |
| | § Utilization, Weight or Volume | | | | | | | 97% | | | | | 100% | |
| | SULPHURIC ACID TANK (926 cu.ft. - 55.9 Tons) | 0.15 | 0.21 | 110 | 18.2 | 50.9 | 49.6 | 89% | 97% | tank | - | - | - | - |
| 661 | Sulphuric Acid | 0.15 | 0.21 | 110 | 18.2 | 50.9 | 49.6 | 89 | 97 | tank | - | - | - | - |
| | § Utilization, Weight or Volume | | | | | | | 97% | | | | | | |
| | ALL FREIGHT CARS (2,113 cu.ft. - 56.2 Tons) | 100.00 | 100.00 | 59.8 | 33.4 | 63.3 | 35.5 | 63% | 57% | - | 9.2 | 3.25 | 67% | 90% |
| | | | | | | | | | | | (only those commodities which moved in containers) | | | |
| | § Utilization, Weight or Volume | | | | | | | 83% | | | | | 99% | |

* For general notes see Analysis 90.2. (e) 20% of tonnage in gondolas, 80% in 05 container. (f) 89% of tonnage in gondolas, 11% in 05 container. o.t. - open top car. (c) 1/2 on flat cars, 1/2 in C12 container. x These commodities apparently moved in cars of larger cubical capacity than the average open top car or tank car.

## SECTION 93. TRANSPORTATION UNIT COSTS

### Analysis 93.1 Carrier Transportation Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | PER TON MILE NET RAIL | PER TON MILE NET WATER | PER TON MILE EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RAIL** | | | | | | | | | | | | | |
| Total | $ 809,406 | 32% | $3,333 | $ 152 | $29.82 | $1.25 | $33.16 | $ 2.07 | $.0783 | $.0011 | $.0034 | - | $.0018 |
| Agency | 155,171 | 6 | 639 | 29 | 5.72 | .24 | 6.36 | .40 | .0150 | .0002 | .0007 | - | .0003 |
| Movement | 342,712 | 13 | 1,411 | 64 | 12.63 | .53 | 14.04 | .88 | .0332 | .0005 | .0015 | - | .0008 |
| Assemblage | 311,523* | 12 | 1,283 | 58 | 11.48 | .48 | 12.76 | .80 | .0301 | .0004 | .0013 | - | .0007 |
| **WATER CARLOT** | | | | | | | | | | | | | |
| Total | $ 63,851 | 62% | $ 373 | $ 587 | | - | $3.40 | $22.71 | $ 3.09 | - | - | $.0035 | $.0020 - |
| Agency | 12,782 | 12 | 75 | 117 | | - | .68 | 4.55 | .62 | - | - | .0007 | .0004 - |
| Movement | 45,930 | 45 | 268 | 422 | | - | 2.45 | 16.34 | 2.22 | - | - | .0025 | .0014 - |
| Assemblage | 5,138 | 5 | 30 | 47 | | - | .27 | 1.83 | .25 | - | - | .0003 | .0002 - |
| **CARGO** | | | | | | | | | | | | | |
| Total | $ 15,157 | 88% | $ 163 | $3,835 | | - | $ .53 | $21.08 | $ 3.39 | - | - | $.0008 | $.0008 - |
| Agency | 1,295 | 8 | 14 | 328 | | - | .05 | 1.80 | .29 | - | - | .0001 | .0001 - |
| Movement | 13,439 | 78 | 145 | 3,401 | | - | .47 | 18.69 | 3.01 | - | - | .0007 | .0007 - |
| Assemblage | 422 | 2 | 5 | 107 | | - | .01 | .59 | .09 | - | - | .0000 | .0000 - |
| **PIPE** | | | | | | | | | | | | | |
| Total | $ 27,901 | 13% | $ 301 | - | | - | $ .33 | - | - | - | - | $.0009# | - - |
| Agency | 1,574 | 1 | 17 | - | | - | .02 | - | - | - | - | .0001# | - - |
| Movement | 17,250 | 8 | 186 | - | | - | .19 | - | - | - | - | .0005# | - - |
| Assemblage | 9,077 | 4 | 98 | - | | - | .11 | - | - | - | - | .0003# | - - |

* Includes Floatage
\# Pipe distance



### Analysis 93.2 Rail Transportation Unit Costs - 1932

| | AGGREGATE (000) | PER CENT OF TOTAL COST | PER ROUTE MILE | PER SCHEDULE | PER SCHEDULE HOUR | PER SCHEDULE MILE | PER VEHICLE ORIG. OR EQUATED | PER VEHICLE MILE | PER NET TON | PER NET TON MILE | PER EQUATED TON MILE | PER GROSS TON MILE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | COST OF RAIL TRANSPORTATION | | | | | | | | |
| **TOTAL** | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 809,406 | 41% | 3,333 | 151.77 | 33.16 | 2.07 | 29.82 | .0783 | 1.25 | .00343 | .00178 | .00108 |
| Eastern | 415,141 | 43 | 6,145 | 161.41 | 40.43 | 2.63 | 28.51 | .0886 | 1.41 | .00366 | .00189 | .00121 |
| Southern | 121,817 | 40 | 2,860 | 131.09 | 27.68 | 1.72 | 26.33 | .0713 | .92 | .00257 | .00133 | .00092 |
| Western | 272,448 | 40 | 2,054 | 148.74 | 27.97 | 1.67 | 31.45 | .0692 | 1.60 | .00361 | .00188 | .00100 |
| New England | 34,499 | 43 | 4,520 | 139.05 | 40.48 | 2.79 | 21.39 | .0997 | 1.33 | .00572 | .00296 | .00162 |
| Trunk Line | 190,207 | 44 | 8,818 | 150.63 | 44.92 | 3.22 | 31.17 | .1011 | 1.16 | .00394 | .00204 | .00136 |
| Central | 190,436 | 41 | 4,964 | 179.46 | 36.76 | 2.21 | 27.82 | .0774 | 1.10 | .00322 | .00166 | .00105 |
| Pocahontas | 35,874 | 38 | 4,632 | 121.52 | 27.54 | 2.11 | 21.36 | .0642 | .52 | .00168 | .00087 | .00072 |
| Southeastern | 85,943 | 40 | 2,466 | 135.54 | 27.74 | 1.60 | 29.16 | .0747 | 1.36 | .00330 | .00171 | .00105 |
| Western Trunk Line | 133,701 | 40 | 2,958 | 145.02 | 28.85 | 1.73 | 27.95 | .0739 | 1.44 | .00381 | .00197 | .00107 |
| Southwestern | 59,788 | 39 | 1,676 | 128.16 | 25.15 | 1.45 | 28.45 | .0662 | 1.39 | .00337 | .00174 | .00093 |
| Pacific Northwest | 32,709 | 39 | 1,650 | 163.09 | 27.17 | 1.69 | 45.04 | .0618 | 1.96 | .00317 | .00164 | .00088 |
| Pacific Southwest | 46,250 | 41 | 2,573 | 190.57 | 30.35 | 1.88 | 43.98 | .0663 | 2.62 | .00394 | .00204 | .00103 |
| **AGENCY** | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 155,171 | 8% | 639 | 29.10 | 6.36 | .40 | 5.72 | .0150 | .24 | .00066 | .00034 | .00021 |
| Eastern | 78,977 | 8 | 1,169 | 30.71 | 7.69 | .50 | 5.42 | .0169 | .22 | .00070 | .00036 | .00023 |
| Southern | 23,340 | 8 | 548 | 25.12 | 5.30 | .33 | 5.04 | .0137 | .18 | .00049 | .00026 | .00018 |
| Western | 52,854 | 8 | 398 | 28.85 | 5.43 | .32 | 6.10 | .0134 | .31 | .00071 | .00036 | .00019 |
| New England | 8,357 | 11 | 1,095 | 33.68 | 9.81 | .68 | 5.18 | .0242 | .32 | .00138 | .00072 | .00039 |
| Trunk Line | 35,424 | 8 | 1,642 | 28.05 | 8.37 | .60 | 5.81 | .0188 | .22 | .00073 | .00038 | .00025 |
| Central | 35,197 | 8 | 918 | 33.17 | 6.79 | .41 | 5.41 | .0143 | .20 | .00060 | .00031 | .00019 |
| Pocahontas | 5,565 | 6 | 739 | 18.85 | 4.27 | .33 | 3.31 | .0100 | .08 | .00026 | .00014 | .00011 |
| Southeastern | 17,775 | 8 | 510 | 28.03 | 5.74 | .33 | 6.03 | .0154 | .28 | .00068 | .00035 | .00022 |
| Western Trunk Line | 26,545 | 8 | 448 | 28.79 | 5.73 | .34 | 5.55 | .0147 | .29 | .00076 | .00039 | .00021 |
| Southwestern | 13,195 | 9 | 370 | 28.28 | 5.55 | .32 | 6.28 | .0146 | .31 | .00074 | .00038 | .00021 |
| Pacific Northwest | 5,239 | 6 | 264 | 26.12 | 4.35 | .27 | 7.21 | .0099 | .31 | .00051 | .00026 | .00014 |
| Pacific Southwest | 7,874 | 7 | 438 | 32.44 | 5.17 | .32 | 7.49 | .0113 | .45 | .00067 | .00035 | .00017 |
| **TRAIN MOVEMENT** | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 342,712 | 17% | 1,411 | 64.26 | 14.04 | .88 | 12.63 | .0332 | .53 | .00145 | .00075 | .00046 |
| Eastern | 154,511 | 16 | 2,287 | 60.08 | 15.05 | .98 | 10.61 | .0330 | .43 | .00136 | .00070 | .00045 |
| Southern | 55,021 | 18 | 1,292 | 59.21 | 12.50 | .78 | 11.89 | .0322 | .42 | .00116 | .00060 | .00042 |
| Western | 133,181 | 20 | 1,004 | 72.71 | 13.67 | .82 | 15.37 | .0338 | .78 | .00178 | .00092 | .00049 |
| New England | 14,237 | 18 | 1,865 | 57.38 | 16.71 | 1.15 | 8.83 | .0411 | .55 | .00236 | .00122 | .00067 |
| Trunk Line | 69,175 | 16 | 3,207 | 54.78 | 16.31 | 1.17 | 11.33 | .0368 | .42 | .00143 | .00074 | .00049 |
| Central | 71,099 | 15 | 1,853 | 67.00 | 13.72 | .83 | 10.38 | .0289 | .41 | .00120 | .00062 | .00039 |
| Pocahontas | 16,626 | 18 | 2,147 | 56.32 | 12.77 | .98 | 9.90 | .0298 | .24 | .00078 | .00040 | .00033 |
| Southeastern | 38,394 | 18 | 1,102 | 60.55 | 12.39 | .71 | 13.03 | .0334 | .61 | .00148 | .00076 | .00047 |
| Western Trunk Line | 59,527 | 18 | 1,006 | 64.57 | 12.84 | .77 | 12.14 | .0329 | .64 | .00170 | .00088 | .00047 |
| Southwestern | 29,626 | 19 | 831 | 63.50 | 12.46 | .72 | 14.10 | .0328 | .69 | .00167 | .00086 | .00046 |
| Pacific Northwest | 18,774 | 23 | 947 | 93.61 | 15.59 | .97 | 25.85 | .0354 | 1.13 | .00182 | .00094 | .00050 |
| Pacific Southwest | 25,254 | 23 | 1,405 | 104.05 | 16.57 | 1.02 | 24.01 | .0362 | 1.43 | .00215 | .00111 | .00056 |
| **ASSEMBLAGE*** | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 311,523 | 16% | 1,283 | 58.41 | 12.76 | .80 | 11.48 | .0301 | .48 | .00132 | .00068 | .00042 |
| Eastern | 181,653 | 19 | 2,689 | 70.63 | 17.69 | 1.15 | 12.47 | .0388 | .50 | .00160 | .00083 | .00053 |
| Southern | 43,456 | 14 | 1,020 | 46.76 | 9.88 | .61 | 9.39 | .0254 | .33 | .00092 | .00047 | .00033 |
| Western | 86,413 | 13 | 651 | 47.18 | 8.87 | .53 | 9.97 | .0219 | .51 | .00115 | .00060 | .00032 |
| New England | 11,905 | 15 | 1,560 | 47.98 | 13.97 | .96 | 7.38 | .0344 | .46 | .00197 | .00102 | .00056 |
| Trunk Line | 85,608 | 20 | 3,969 | 67.80 | 20.22 | 1.45 | 14.03 | .0455 | .52 | .00177 | .00092 | .00061 |
| Central | 84,140 | 18 | 2,193 | 79.29 | 16.24 | .98 | 12.29 | .0342 | .49 | .00142 | .00074 | .00046 |
| Pocahontas | 13,682 | 15 | 1,767 | 46.35 | 10.50 | .80 | 8.14 | .0245 | .20 | .00064 | .00033 | .00027 |
| Southeastern | 29,774 | 14 | 894 | 46.96 | 9.61 | .55 | 10.10 | .0259 | .47 | .00114 | .00059 | .00036 |
| Western Trunk Line | 47,628 | 14 | 804 | 51.66 | 10.28 | .61 | 9.96 | .0263 | .51 | .00136 | .00070 | .00038 |
| Southwestern | 16,967 | 11 | 476 | 36.37 | 7.14 | .44 | 8.07 | .0188 | .39 | .00096 | .00049 | .00026 |
| Pacific Northwest | 8,696 | 10 | 439 | 43.36 | 7.22 | .45 | 11.97 | .0164 | .52 | .00084 | .00044 | .00023 |
| Pacific Southwest | 13,122 | 12 | 730 | 54.07 | 8.61 | .53 | 12.48 | .0188 | .74 | .00112 | .00058 | .00029 |

* Includes Floatage.

SECTION 93. TRANSPORTATION UNIT COSTS

Analysis 93.3 Water Transportation Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | PER TON MILE NET RAIL | PER TON MILE NET WATER |
|---|---|---|---|---|---|---|---|---|---|
| CARLOT | | | | | | | | | |
| AGENCY | | | | | | | | | |
| United States | $ 12,783 | 12% | $ 75 | $ 117 | $ .68 | $ 4.55 | $ .62 | $.0035 | $.0020 |
| Atlantic Coast | 3,198 | 13 | 143 | 224 | .68 | 4.47 | .56 | .0018 | .0016 |
| Atlantic Gulf | 1,683 | 13 | 64 | 1,473 | .74 | 5.94 | .59 | .0006 | .0005 |
| Intercoastal | 4,237 | 11 | 48 | 9,763 | 1.08 | 5.27 | .72 | .0004 | .0002 |
| Inland Waterways | 1,685 | 20 | 178 | 2,492 | .74 | 7.59 | 1.99 | .0011 | .0007 |
| Great Lakes | 829 | 11 | 76 | 65 | .28 | 3.52 | .44 | .0007 | .0006 |
| Pacific Coast | 1,150 | 12 | 82 | 14 | .44 | 2.08 | .33 | .0011 | .0012 |
| VOYAGE | | | | | | | | | |
| United States | $ 45,930 | 45% | $ 268 | $ 422 | $2.45 | $16.34 | $ 2.22 | $.0025 | $.0014 |
| Atlantic Coast | 9,129 | 37 | 408 | 640 | 1.95 | 12.77 | 1.60 | .0052 | .0046 |
| Atlantic Gulf | 6,257 | 47 | 239 | 5,479 | 2.74 | 22.10 | 2.21 | .0023 | .0018 |
| Intercoastal | 19,572 | 50 | 222 | 45,095 | 3.00 | 24.36 | 3.31 | .0020 | .0009 |
| Inland Waterways | 2,503 | 29 | 264 | 3,702 | 1.09 | 11.28 | 2.96 | .0017 | .0011 |
| Great Lakes | 3,290 | 44 | 300 | 260 | 1.10 | 13.97 | 1.75 | .0029 | .0026 |
| Pacific Coast | 5,179 | 55 | 367 | 64 | 2.00 | 9.38 | 1.47 | .0050 | .0054 |
| DOCK | | | | | | | | | |
| United States | $ 3,915 | 4% | $ 23 | $ 36 | $ .21 | $ 1.39 | $ .19 | $.0002 | $.0001 |
| Atlantic Coast | 1,414 | 6 | 63 | 99 | .30 | 1.98 | .25 | .0008 | .0007 |
| Atlantic Gulf | 438 | 3 | 17 | 383 | .19 | 1.55 | .15 | .0002 | .0001 |
| Intercoastal | 1,007 | 3 | 11 | 2,319 | .26 | 1.25 | 1.70 | .0001 | .0000 |
| Inland Waterways | 494 | 6 | 52 | 731 | .22 | 2.23 | .58 | .0003 | .0002 |
| Great Lakes | 244 | 3 | 22 | 19 | .08 | 1.04 | .13 | .0002 | .0002 |
| Pacific Coast | 318 | 3 | 23 | 3 | .12 | .58 | .09 | .0003 | .0003 |
| FLOATAGE | | | | | | | | | |
| United States | $ 1,224 | 1% | $ 7 | $ 11 | $ .07 | $ .44 | $ .06 | $.0001 | $.0000 |
| Atlantic Coast | 730 | 3 | 33 | 51 | .16 | 1.02 | .13 | .0004 | .0004 |
| Atlantic Gulf | 336 | 3 | 13 | 294 | .15 | 1.19 | .12 | .0001 | .0001 |
| Intercoastal | 76 | 0 | 1 | 175 | .02 | .09 | .01 | .0000 | .0000 |
| Inland Waterways | 15 | 0 | 2 | 22 | .01 | .07 | .02 | .0000 | .0000 |
| Great Lakes | 0 | 0 | 0 | 0 | .00 | .00 | .00 | .0000 | .0000 |
| Pacific Coast | 67 | 1 | 5 | 84 | .03 | .12 | .02 | .0001 | .0001 |
| CARGO | | | | | | | | | |
| AGENCY | | | | | | | | | |
| United States | $ 1,295 | 8% | $ 14 | $ 328 | $ .05 | $ 1.80 | $ .29 | $.0001 | $.0001 |
| Atlantic Coast | 47 | 1 | 3 | 90 | .01 | .52 | .09 | .0000 | .0000 |
| Atlantic Gulf | 0 | 0 | 0 | 0 | .00 | .00 | .00 | .0000 | .0000 |
| Intercoastal | 57 | 31 | 9 | 3,542 | 1.17 | 1.65 | .30 | .0004 | .0002 |
| Inland Waterways | 8 | 1 | 2 | 33 | .01 | .12 | .03 | .0000 | .0000 |
| Great Lakes | 1,087 | 10 | 22 | 498 | .05 | 3.02 | .28 | .0001 | .0001 |
| Pacific Coast | 97 | 26 | 17 | 100 | .60 | .72 | .22 | .0015 | .0015 |
| VOYAGE | | | | | | | | | |
| United States | $ 13,439 | 78% | $ 145 | $ 3,401 | $ .47 | $18.69 | $ 3.01 | $.0007 | $.0007 |
| Atlantic Coast | 2,509 | 77 | 136 | 4,843 | .74 | 27.69 | 4.58 | .0012 | .0012 |
| Atlantic Gulf | 762 | 62 | 83 | 20,064 | 1.47 | 24.13 | 4.73 | .0009 | .0008 |
| Intercoastal | 135 | 74 | 22 | 8,421 | 2.79 | 3.91 | .70 | .0010 | .0005 |
| Inland Waterways | 295 | 29 | 72 | 1,282 | .50 | 4.35 | 1.20 | .0008 | .0005 |
| Great Lakes | 9,223 | 83 | 187 | 4,230 | .39 | 25.59 | 3.21 | .0006 | .0006 |
| Pacific Coast | 515 | 137 | 92 | 530 | 3.19 | 3.84 | 1.16 | .0078 | .0078 |
| DOCK | | | | | | | | | |
| United States | $ 133 | 1% | $ 1 | $ 34 | $ .00 | $ .18 | $ .03 | $.0000 | $.0000 |
| Atlantic Coast | 16 | - | 1 | 31 | .00 | .18 | .03 | .0000 | .0000 |
| Atlantic Gulf | 6 | 0 | 1 | 147 | .01 | .19 | .04 | .0000 | .0000 |
| Intercoastal | 6 | 3 | 1 | 352 | .12 | .17 | .03 | .0000 | .0000 |
| Inland Waterways | 14 | 1 | 3 | 61 | .02 | .21 | .06 | .0000 | .0000 |
| Great Lakes | 91 | 1 | 2 | 41 | .00 | .25 | .03 | .0000 | .0000 |
| Pacific Coast | 0 | 0 | 0 | 0 | .00 | .00 | .00 | .0000 | .0000 |
| FLOATAGE | | | | | | | | | |
| United States | $ 340 | 2% | $ 3 | 73 | $ .01 | $ .40 | $ .06 | $.0000 | $.0000 |
| Atlantic Coast | 288 | 9 | 16 | 555 | .09 | 2.52 | .53 | .0001 | .0001 |
| Atlantic Gulf | 0 | 0 | 0 | 0 | .00 | .00 | .00 | .0000 | .0000 |
| Intercoastal | 0 | 0 | 0 | 0 | .00 | .00 | .00 | .0000 | .0000 |
| Inland Waterways | 0 | 0 | 0 | 0 | .00 | .00 | .00 | .0000 | .0000 |
| Great Lakes | 2 | 0 | 0 | 1 | .00 | .01 | .00 | .0000 | .0000 |
| Pacific Coast | 0 | 0 | 0 | 0 | .00 | .00 | .00 | .0000 | .0000 |



SECTION 93. TRANSPORTATION UNIT COSTS

Analysis 93.4 Pipe Transportation Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | NET TON | NET TON MILE |
|---|---|---|---|---|---|
| TRANSPORTATION | | | | | |
| United States | $ 27,901 | 13% | $ 301 | $ .33 | $.0039 |
| North Atlantic Coast | 2,552 | 27 | 173 | .90 | .0024 |
| Great Lakes Southwest | 12,698 | 23 | 284 | .51 | .0006 |
| Southwest Gulf | 12,651 | 12 | 380 | .23 | .0013 |
| AGENCY | | | | | |
| United States | $ 1,574 | 1% | $ 17 | $ .02 | $.0001 |
| North Atlantic Coast | 149 | 2 | 10 | .05 | .0001 |
| Great Lakes Southwest | 723 | 1 | 16 | .03 | .0000 |
| Southwest Gulf | 703 | 1 | 21 | .01 | .0001 |
| MOVEMENT | | | | | |
| United States | $ 17,250 | 8% | $ 186 | $ .19 | $.0005 |
| North Atlantic Coast | 1,134 | 14 | 91 | .05 | .0001 |
| Great Lakes Southwest | 8,369 | 8 | 187 | .33 | .0004 |
| Southwest Gulf | 7,546 | 7 | 227 | .14 | .0008 |
| ASSEMBLAGE | | | | | |
| United States | $ 9,077 | 4% | $ 98 | $ .11 | $.0003 |
| North Atlantic Coast | 1,068 | 11 | 73 | .38 | .0010 |
| Great Lakes Southwest | 3,606 | 4 | 81 | .14 | .0002 |
| Southwest Gulf | 4,402 | 4 | 132 | .08 | .0005 |

SECTION 95. ASSEMBLAGE

Analysis 95.1 Rail Assemblage Costs

| | AGGREGATE (000) | PER CENT OF TOTAL COST | PER ROUTE MILE | PER SCHED-ULE | PER SCHED-ULE HOUR | PER SCHED-ULE MILE | PER VEHI-CLE ORIG. OR EQUAT-ED | PER VEHI-CLE MILE | PER NET TON | PER NET TON MILE | PER EQUAT-ED TON MILE | PER GROSS TON MILE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLASSIFICATION | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 127,919 | 7% | 527 | 23.99 | 5.24 | .33 | 4.71 | .0124 | .20 | .00054 | .00028 | .00017 |
| New England | 4,706 | 6 | 617 | 18.97 | 5.52 | .38 | 2.92 | .0136 | .18 | .00078 | .00040 | .00022 |
| Trunk Line | 31,415 | 7 | 1,456 | 24.88 | 7.42 | .53 | 5.15 | .0167 | .19 | .00065 | .00034 | .00022 |
| Central | 31,882 | 7 | 831 | 30.04 | 6.15 | .37 | 4.66 | .0130 | .18 | .00054 | .00028 | .00018 |
| Pocahontas | 6,090 | 7 | 786 | 20.63 | 4.68 | .36 | 3.63 | .0109 | .09 | .00029 | .00015 | .00012 |
| Southeastern | 14,700 | 7 | 422 | 23.18 | 4.75 | .27 | 4.99 | .0128 | .23 | .00056 | .00029 | .00018 |
| Western Trunk Line | 21,925 | 7 | 370 | 23.78 | 4.73 | .28 | 4.58 | .0121 | .24 | .00063 | .00032 | .00017 |
| Southwestern | 7,774 | 5 | 218 | 16.66 | 3.27 | .19 | 3.70 | .0086 | .18 | .00044 | .00023 | .00012 |
| Pacific Northwest | 3,550 | 4 | 179 | 17.71 | 2.95 | .18 | 4.89 | .0067 | .21 | .00034 | .00018 | .00010 |
| Pacific Southwest | 5,877 | 5 | 327 | 24.22 | 3.86 | .24 | 5.59 | .0084 | .33 | .00050 | .00026 | .00013 |
| TRANSFER - RAIL | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 73,310 | 4% | 302 | 13.74 | 3.00 | .19 | 2.70 | .0071 | .11 | .00031 | .00016 | .00010 |
| New England | 3,407 | 4 | 446 | 13.72 | 4.00 | .28 | 2.10 | .0099 | .14 | .00056 | .00029 | .00016 |
| Trunk Line | 18,577 | 4 | 861 | 14.72 | 4.39 | .31 | 3.04 | .0099 | .11 | .00039 | .00020 | .00013 |
| Central | 24,033 | 5 | 627 | 22.65 | 4.64 | .28 | 3.51 | .0098 | .14 | .00041 | .00021 | .00013 |
| Pocahontas | 4,023 | 4 | 519 | 13.63 | 3.09 | .24 | 2.40 | .0072 | .06 | .00019 | .00010 | .00008 |
| Southeastern | 5,586 | 3 | 159 | 8.72 | 1.78 | .10 | 1.88 | .0048 | .09 | .00021 | .00011 | .00007 |
| Western Trunk Line | 11,224 | 3 | 190 | 12.17 | 2.42 | .14 | 2.35 | .0062 | .12 | .00032 | .00017 | .00009 |
| Southwestern | 3,966 | 3 | 111 | 8.50 | 1.67 | .10 | 1.89 | .0044 | .09 | .00022 | .00012 | .00006 |
| Pacific Northwest | 1,314 | 2 | 66 | 6.55 | 1.09 | .07 | 1.81 | .0025 | .08 | .00013 | .00007 | .00004 |
| Pacific Southwest | 1,239 | 1 | 69 | 5.11 | .81 | .05 | 1.18 | .0018 | .07 | .00011 | .00005 | .00003 |
| TRANSFER - WATER | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 12,026 | 1% | 50 | 2.26 | .49 | .03 | .44 | .0012 | .02 | .00005 | .00003 | .00002 |
| New England | 9 | # | 1 | .04 | .01 | .00 | .01 | .0000 | .00 | * | * | * |
| Trunk Line | 9,505 | 2 | 441 | 7.53 | 2.24 | .16 | 1.56 | .0051 | .06 | .00020 | .00010 | .00007 |
| Central | 1,353 | # | 35 | 1.27 | .26 | .02 | .20 | .0006 | .01 | .00002 | .00001 | .00001 |
| Pocahontas | 491 | 1 | 63 | 1.66 | .38 | .03 | .29 | .0009 | .01 | .00002 | .00001 | .00001 |
| Southeastern | 126 | # | 4 | .20 | .04 | .00 | .04 | .0001 | .00 | * | * | * |
| Western Trunk Line | 47 | # | 1 | .05 | .01 | .00 | .01 | .0000 | .00 | * | * | * |
| Southwestern | 97 | # | 3 | .22 | .04 | .00 | .05 | .0001 | .00 | .00001 | * | * |
| Pacific Northwest | 50 | # | 3 | .25 | .04 | .00 | .07 | .0001 | .00 | * | * | * |
| Pacific Southwest | 348 | # | 19 | 1.43 | .23 | .01 | .33 | .0005 | .02 | .00003 | .00002 | .00001 |
| INTERCHANGE | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 14,992 | 1% | 62 | 2.80 | .61 | .04 | .55 | .0015 | .02 | .00006 | .00003 | .00002 |
| New England | 98 | # | 13 | .39 | .11 | .01 | .06 | .0003 | .00 | .00002 | .00001 | * |
| Trunk Line | 3,554 | 1 | 165 | 2.81 | .84 | .06 | .58 | .0019 | .02 | .00007 | .00004 | .00003 |
| Central | 4,578 | 1 | 119 | 4.31 | .88 | .05 | .67 | .0019 | .03 | .00008 | .00004 | .00003 |
| Pocahontas | 553 | 1 | 71 | 1.87 | .42 | .03 | .33 | .0010 | .01 | .00003 | .00001 | .00001 |
| Southeastern | 1,675 | 1 | 48 | 2.64 | .54 | .03 | .57 | .0015 | .03 | .00006 | .00003 | .00002 |
| Western Trunk Line | 2,417 | 1 | 41 | 2.62 | .52 | .03 | .51 | .0013 | .03 | .00007 | .00004 | .00002 |
| Southwestern | 1,004 | 1 | 29 | 2.15 | .42 | .02 | .48 | .0011 | .02 | .00006 | .00003 | .00002 |
| Pacific Northwest | 305 | # | 15 | 1.52 | .25 | .02 | .42 | .0006 | .02 | .00003 | .00002 | .00001 |
| Pacific Southwest | 809 | 1 | 45 | 3.33 | .53 | .03 | .77 | .0012 | .05 | .00007 | .00004 | .00002 |
| INDUSTRIAL | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 83,275 | 4% | 343 | 15.62 | 3.41 | .21 | 3.07 | .0081 | .13 | .00035 | .00018 | .00011 |
| New England | 3,685 | 5 | 483 | 14.85 | 4.32 | .30 | 2.29 | .0107 | .14 | .00061 | .00032 | .00017 |
| Trunk Line | 22,557 | 5 | 1,046 | 17.86 | 5.33 | .38 | 3.70 | .0120 | .14 | .00047 | .00024 | .00016 |
| Central | 22,295 | 5 | 581 | 21.01 | 4.30 | .26 | 3.26 | .0091 | .13 | .00038 | .00019 | .00012 |
| Pocahontas | 2,525 | 3 | 326 | 8.55 | 1.94 | .15 | 1.50 | .0045 | .04 | .00012 | .00006 | .00005 |
| Southeastern | 7,747 | 4 | 222 | 12.22 | 2.50 | .14 | 2.63 | .0067 | .12 | .00030 | .00015 | .00009 |
| Western Trunk Line | 12,014 | 4 | 203 | 13.03 | 2.59 | .16 | 2.51 | .0066 | .13 | .00034 | .00018 | .00010 |
| Southwestern | 4,126 | 3 | 116 | 8.84 | 1.74 | .10 | 1.96 | .0046 | .10 | .00023 | .00012 | .00006 |
| Pacific Northwest | 3,477 | 4 | 175 | 17.33 | 2.89 | .18 | 4.79 | .0066 | .21 | .00034 | .00017 | .00009 |
| Pacific Southwest | 4,849 | 4 | 270 | 19.98 | 3.18 | .20 | 4.61 | .0070 | .27 | .00041 | .00021 | .00011 |

* Less than .000005
\# Less than 1/2%



SECTION 95. ASSEMBLAGE

Analysis 95.2 Distribution of Switch Engine Time among Services - Summary of all Terminal Districts - 1932

| | | DISTRIBUTION OF SWITCH ENGINE MINUTES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ROAD SERVICE | CLASSIFICATION | | TRANSFER | | INTERCHANGE | | INDUSTRIAL | |
| DISTRICT OR TERRITORY | AGGREGATE MINUTES | PERCENT OF TOTAL | PER CAR (MIN-UTES) | PER CENT OF TOTAL | PER CAR (MIN-UTES) | PER CENT OF TOTAL | PER CAR (MIN-UTES) | PER CENT OF TOTAL | PER CAR (MIN-UTES) | PER CENT OF TOTAL |
| ALL DISTRICTS | | | | | | | | | | |
| United States | 12,917,706 | 1% | 4.4 | 40% | 4.8 | 25% | 3.7 | 6% | 10.0 | 28% |
| Eastern | 7,583,789 | 2 | 4.3 | 37 | 5.1 | 28 | 3.6 | 6 | 9.5 | 27 |
| Southern | 1,423,999 | 1 | 5.9 | 52 | 2.9 | 17 | 4.5 | 5 | 9.7 | 25 |
| Western | 3,909,918 | 1 | 4.1 | 41 | 4.8 | 21 | 3.6 | 6 | 11.1 | 31 |
| New England | 108,704 | 1 | 2.9 | 40 | 4.0 | 28 | 3.0 | 1 | 7.5 | 29 |
| Trunk Line | 2,524,937 | 4 | 5.0 | 37 | 5.7 | 24 | 4.4 | 5 | 9.3 | 30 |
| Central | 4,950,148 | 1 | 4.1 | 38 | 4.9 | 30 | 3.4 | 6 | 9.7 | 26 |
| Pocahontas | 119,571 | 3 | 4.0 | 45 | 4.0 | 29 | 4.0 | 5 | 6.2 | 18 |
| Southeastern | 1,304,428 | # | 6.2 | 53 | 2.8 | 16 | 4.6 | 5 | 10.0 | 25 |
| Western Trunk Line | 1,663,574 | 1 | 3.7 | 44 | 5.4 | 25 | 3.6 | 5 | 9.6 | 25 |
| Southwestern | 843,378 | 1 | 3.8 | 45 | 3.6 | 22 | 2.5 | 7 | 8.4 | 25 |
| Pacific Northwest | 684,417 | 1 | 5.9 | 35 | 4.7 | 16 | 4.3 | 6 | 13.7 | 42 |
| Pacific Southwest | 718,549 | # | 5.2 | 37 | 5.8 | 15 | 5.7 | 8 | 15.6 | 39 |
| METROPOLITAN DISTRICTS | | | | | | | | | | |
| United States | 11,664,685 | 1% | 4.6 | 39% | 4.8 | 25% | 3.8 | 6% | 10.3 | 28% |
| Eastern | 7,395,269 | 2 | 4.3 | 37 | 5.1 | 28 | 3.6 | 6 | 9.5 | 27 |
| Southern | 1,185,093 | # | 6.9 | 54 | 2.7 | 15 | 4.6 | 6 | 10.5 | 25 |
| Western | 3,084,323 | 1 | 4.3 | 39 | 5.0 | 22 | 3.9 | 7 | 12.1 | 32 |
| New, England | 83,980 | 1 | 2.9 | 41 | 4.1 | 29 | 3.1 | 1 | 7.7 | 28 |
| Trunk Line | 2,470,704 | 4 | 5.0 | 36 | 5.7 | 25 | 4.4 | 6 | 9.3 | 30 |
| Central | 4,640,585 | 1 | 4.1 | 38 | 4.9 | 30 | 3.3 | 6 | 9.7 | 25 |
| Pocahontas | 51,032 | 1 | 4.7 | 45 | 3.5 | 29 | 5.4 | 8 | 7.3 | 17 |
| Southeastern | 1,134,061 | # | 7.0 | 55 | 2.6 | 15 | 4.6 | 5 | 10.6 | 25 |
| Western Trunk Line | 1,275,694 | 1 | 3.9 | 41 | 5.7 | 27 | 3.5 | 5 | 10.7 | 26 |
| Southwestern | 566,471 | # | 3.7 | 44 | 3.4 | 21 | 3.0 | 8 | 9.1 | 27 |
| Pacific Northwest | 631,137 | 1 | 6.4 | 34 | 4.9 | 16 | 4.6 | 7 | 14.4 | 42 |
| Pacific Southwest | 611,021 | # | 5.1 | 33 | 5.8 | 17 | 5.6 | 9 | 15.5 | 40 |
| MAJOR DISTRICTS | | | | | | | | | | |
| United States | 1,253,021 | 2% | 3.6 | 48% | 4.2 | 20% | 2.9 | 4% | 8.0 | 26% |
| Eastern | 188,520 | 1 | 4.1 | 41 | 5.1 | 25 | 3.7 | 3 | 9.4 | 30 |
| Southern | 238,906 | 3 | 3.2 | 44 | 4.1 | 24 | 4.1 | 5 | 6.9 | 25 |
| Western | 825,595 | 2 | 3.7 | 51 | 3.9 | 18 | 2.5 | 4 | 8.0 | 25 |
| New England | 24,724 | 4 | 2.8 | 36 | 3.5 | 27 | 2.1 | # | 7.0 | 33 |
| Trunk Line | 54,233 | 2 | 4.4 | 47 | 6.1 | 22 | 2.9 | 3 | 9.4 | 27 |
| Central | 109,563 | # | 4.3 | 40 | 5.3 | 26 | 4.2 | 4 | 10.2 | 30 |
| Pocahontas | 68,539 | 5 | 3.6 | 44 | 4.6 | 30 | 2.7 | 3 | 5.7 | 19 |
| Southeastern | 170,367 | 2 | 3.1 | 44 | 3.9 | 22 | 4.6 | 6 | 7.4 | 26 |
| Western Trunk Line | 387,880 | 2 | 3.2 | 52 | 4.2 | 18 | 4.5 | 5 | 7.1 | 23 |
| Southwestern | 276,907 | 2 | 3.8 | 46 | 3.8 | 25 | 1.4 | 4 | 7.1 | 22 |
| Pacific Northwest | 53,280 | 1 | 3.5 | 46 | 3.0 | 14 | .6 | 1 | 8.4 | 38 |
| Pacific Southwest | 107,528 | 1 | 5.6 | 60 | 5.2 | 1 | 6.4 | 3 | 16.2 | 35 |

\# Less than 1%.

SECTION 95. ASSEMBLAGE

Analysis 95.3 Distribution of Switch Engine Time among Services - Eastern District - 1932

| TERMINAL DISTRICTS | AGGREGATE MINUTES | DISTRIBUTION OF SWITCH ENGINE MINUTES: ROAD SERVICE PERCENT OF TOTAL | CLASSIFICATION PER CAR (MINUTES) | CLASSIFICATION PER CENT OF TOTAL | TRANSFER PER CAR (MINUTES) | TRANSFER PER CENT OF TOTAL | INTERCHANGE PER CAR (MINUTES) | INTERCHANGE PER CENT OF TOTAL | INDUSTRIAL PER CAR (MINUTES) | INDUSTRIAL PER CENT OF TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| METROPOLITAN TERMINALS | | | | | | | | | | |
| UNITED STATES | 11,664,685 | 1% | 4.6 | 39% | 4.8 | 25% | 3.8 | 6% | 10.3 | 28% |
| EASTERN DISTRICT | 7,395,269 | 2 | 4.3 | 37 | 5.1 | 28 | 3.6 | 6 | 9.5 | 21 |
| Boston, Mass. | 33,303 | 1 | 2.7 | 37 | 3.6 | 25 | 4.2 | 2 | 8.2 | 35 |
| Hartford, Conn. | 4,951 | # | 3.0 | 41 | 4.2 | 26 | - | - | 6.8 | 32 |
| New Haven, Conn. | 17,033 | # | 2.3 | 47 | 4.0 | 35 | - | - | 7.8 | 18 |
| Providence, R.I. | 15,061 | 1 | 3.9 | 30 | 4.9 | 35 | 2.2 | 1 | 7.3 | 33 |
| Springfield, Mass. | 13,632 | 1 | 4.2 | 57 | 4.7 | 25 | 1.2 | 2 | 6.7 | 16 |
| Baltimore, Md. | 34,689 | 1 | 5.9 | 37 | 8.1 | 21 | 5.0 | 2 | 11.3 | 38 |
| Buffalo, N.Y. | 120,953 | 3 | 4.9 | 40 | 6.7 | 36 | 3.6 | 3 | 10.0 | 17 |
| New York City | 1,902,238 | 5 | 5.2 | 35 | 5.6 | 23 | 4.4 | 6 | 9.2 | 31 |
| Philadelphia, Pa. | 211,911 | # | 5.0 | 38 | 5.8 | 27 | 3.9 | 2 | 10.6 | 33 |
| Pittsburgh, Pa. | 56,207 | # | 3.0 | 51 | 6.5 | 18 | 6.4 | 4 | 6.6 | 27 |
| Reading, Pa. | 9,213 | - | 6.4 | 37 | 9.2 | 32 | - | - | 7.4 | 32 |
| Scranton, Pa. | 18,587 | 1 | 4.4 | 46 | 7.3 | 28 | 4.3 | 10 | 7.7 | 15 |
| Syracuse, N.Y. | 65,815 | 2 | 4.9 | 54 | 3.9 | 32 | 19.7 | # | 12.8 | 11 |
| Trenton, N.J. | 9,600 | - | 5.4 | 46 | 6.9 | 20 | - | - | 9.6 | 34 |
| Washington, D.C. | 30,687 | - | 6.0 | 33 | 12.1 | 22 | 8.2 | 2 | 12.6 | 43 |
| Wilmington, Del. | 10,805 | 1 | 4.2 | 50 | 7.4 | 30 | 8.0 | 3 | 15.0 | 16 |
| Akron, Ohio | 16,748 | # | 3.1 | 30 | 3.2 | 29 | 1.9 | 5 | 7.1 | 36 |
| Chicago, Ill. | 3,039,189 | # | 4.0 | 35 | 4.8 | 29 | 3.4 | 8 | 10.1 | 28 |
| Cincinnati, Ohio | 462,660 | # | 4.7 | 45 | 5.8 | 40 | 3.6 | 2 | 8.2 | 13 |
| Cleveland, Ohio | 90,095 | 4 | 5.8 | 45 | 5.6 | 31 | 4.1 | 3 | 9.7 | 17 |
| Columbus, Ohio | 47,702 | 3 | 4.3 | 46 | 5.3 | 20 | 4.1 | 15 | 7.3 | 16 |
| Dayton, Ohio | 6,325 | # | 3.8 | 37 | 4.8 | 25 | 2.3 | 3 | 7.3 | 34 |
| Detroit, Mich. | 128,385 | 1 | 4.7 | 36 | 6.3 | 38 | 2.1 | 2 | 9.2 | 24 |
| Evansville, Ind. | 29,049 | # | 6.8 | 31 | 7.8 | 27 | 0.4 | 1 | 13.1 | 40 |
| Flint, Mich. | 15,032 | - | 3.2 | 24 | 2.9 | 33 | 1.3 | 1 | 9.1 | 42 |
| Grand Rapids, Mich. | 48,068 | # | 3.9 | 46 | 7.8 | 25 | 1.4 | 1 | 11.2 | 29 |
| Indianapolis, Ind. | 381,054 | 6 | 4.2 | 46 | 4.1 | 25 | 3.3 | 5 | 10.7 | 18 |
| Milwaukee, Wis. | 274,835 | # | 3.5 | 40 | 5.2 | 30 | 2.5 | 1 | 8.4 | 29 |
| Peoria, Ill. | 109,076 | 1 | 3.6 | 43 | 4.0 | 33 | 0.8 | 1 | 7.6 | 23 |
| Toledo, Ohio | 146,368 | 2 | 4.6 | 37 | 5.1 | 31 | 4.8 | 6 | 8.6 | 24 |
| Youngstown, Ohio | 45,998 | 1 | 5.5 | 31 | 6.2 | 32 | 4.0 | 3 | 8.7 | 33 |
| MAJOR TERMINALS | | | | | | | | | | |
| UNITED STATES | 1,253,021 | 2% | 3.6 | 48% | 4.2 | 20% | 2.9 | 4% | 8.0 | 26% |
| EASTERN DISTRICT | 188,520 | 1 | 4.1 | 41 | 5.1 | 25 | 3.7 | 3 | 9.4 | 30 |
| Ansonia, Conn. | 2,816 | - | 4.4 | 20 | 6.1 | 36 | - | - | 9.7 | 45 |
| Manchester, N. H. | 4,747 | - | 2.7 | 29 | 1.8 | 20 | - | - | 6.9 | 52 |
| Pittsfield, Mass. | 3,560 | 17 | 3.8 | 40 | 2.4 | 25 | .9 | # | 5.2 | 17 |
| Portland, Maine | 13,601 | 3 | 2.5 | 40 | 4.6 | 28 | 2.8 | # | 6.9 | 29 |
| Bradford, Pa. | 2,880 | - | 6.7 | 8 | 13.2 | 47 | 4.5 | # | 16.2 | 45 |
| Chambersburg, Pa. | 7,238 | 1 | 5.2 | 44 | 11.0 | 15 | - | - | 14.5 | 40 |
| Elmira, N. Y. | 4,976 | # | 4.0 | 71 | 3.7 | 6 | 5.7 | 4 | 8.4 | 19 |
| Jamestown, N.Y. | 6,105 | - | 4.5 | 41 | 3.5 | 20 | 6.0 | 3 | 7.4 | 36 |
| Niagara Falls, N.Y. | 22,539 | 2 | 4.9 | 51 | 5.8 | 24 | 2.3 | 4 | 8.3 | 18 |
| North Tonowanda, N.Y. | 2,799 | - | 4.7 | 22 | 9.1 | 40 | 6.2 | 2 | 11.2 | 36 |
| Watertown, N. Y. | 7,696 | 3 | 3.3 | 49 | 5.5 | 19 | - | - | 7.7 | 29 |
| Anderson, Ind. | 6,773 | # | 3.6 | 41 | 10.2 | 29 | 7.7 | 2 | 14.7 | 27 |
| Ray City, Mich. | 9,033 | 1 | 4.8 | 39 | 6.3 | 31 | 4.8 | 3 | 7.5 | 25 |
| Cairo, Ill. | 21,233 | - | 5.3 | 33 | 6.2 | 29 | 3.3 | 5 | 3.5 | 33 |
| Harrisburg, Ill. | 5,952 | # | 6.1 | 47 | 5.0 | 34 | 3.0 | 1 | 3.5 | 18 |
| Kokomo, Ind. | 2,940 | - | 3.9 | 18 | 10.5 | 43 | 2.0 | # | 9.2 | 39 |
| Lima, Ohio | 2,100 | 3 | 3.7 | 67 | 6.9 | 19 | 2.5 | 4 | 6.8 | 8 |
| Ludington, Mich. | 6,794 | 1 | 4.6 | 51 | 3.4 | 31 | - | - | 8.6 | 16 |
| Madison, Wis. | 15,054 | # | 4.7 | 45 | 6.4 | 12 | 7.2 | 5 | 2.6 | 38 |
| Neenah-Menasha, Wis. | 5,700 | # | 4.8 | 50 | 6.5 | 7 | 6.9 | 6 | 12.4 | 37 |
| Rockford, Ill. | 11,052 | 1 | 3.3 | 24 | 3.8 | 18 | 4.6 | 8 | 9.0 | 50 |
| Springfield, Ill. | 8,951 | - | 3.8 | 43 | 4.8 | 33 | 4.3 | 4 | 6.7 | 19 |
| Terre-Haute, Ind. | 13,781 | # | 3.5 | 41 | 4.3 | 32 | 2.5 | 3 | 16.5 | 23 |

# Less than 1/2%.



SECTION 95. ASSEMBLAGE

Analysis 95.4 Distribution of Switch Engine Time among Services - Southern District - 1932

| TERMINAL DISTRICT | AGGREGATE MINUTES | DISTRIBUTION OF SWITCH ENGINE MINUTES: ROAD SERVICE PERCENT OF TOTAL | CLASSIFICATION PER CAR (MINUTES) | CLASSIFICATION PER CENT OF TOTAL | TRANSFER PER CAR (MINUTES) | TRANSFER PER CENT OF TOTAL | INTERCHANGE PER CAR (MINUTES) | INTERCHANGE PER CENT OF TOTAL | INDUSTRIAL PER CAR (MINUTES) | INDUSTRIAL PER CENT OF TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| METROPOLITAN TERMINALS | | | | | | | | | | |
| UNITED STATES | 11,664,685 | 1% | 4.6 | 39% | 4.8 | 25% | 3.8 | 6% | 10.3 | 28% |
| SOUTHERN DISTRICT | 1,185,093 | # | 6.9 | 54 | 2.7 | 15 | 4.6 | 6 | 10.5 | 25 |
| Norfolk, Va. | 44,856 | # | 5.2 | 47 | 3.2 | 27 | 6.6 | 8 | 7.5 | 18 |
| Richmond, Va. | 6,176 | 6 | 2.4 | 34 | 5.4 | 43 | 1.3 | 4 | 5.9 | 13 |
| Atlanta, Ga. | 30,884 | # | 3.7 | 37 | 5.9 | 18 | 14.3 | 12 | 11.0 | 33 |
| Birmingham, Ala. | 750,546 | # | 9.2 | 61 | 1.5 | 9 | 5.2 | 5 | 11.0 | 25 |
| Chattanooga, Tenn. | 5,177 | - | 4.5 | 48 | 3.9 | 11 | 7.5 | 11 | 9.8 | 31 |
| Jacksonville, Fla. | 5,176 | 2 | 3.6 | 35 | 4.8 | 20 | 4.9 | 8 | 10.1 | 36 |
| Louisville, Ky. | 27,760 | 1 | 9.6 | 48 | 7.5 | 7 | 5.7 | 6 | 25.6 | 38 |
| Memphis, Tenn. | 155,707 | # | 3.7 | 45 | 4.8 | 28 | 2.9 | 4 | 7.7 | 23 |
| Nashville, Tenn. | 21,238 | - | 6.5 | 53 | 7.2 | 17 | 7.4 | 1 | 13.8 | 30 |
| New Orleans, La. | 126,938 | # | 4.2 | 36 | 4.6 | 32 | 2.9 | 7 | 10.5 | 25 |
| Tampa, Fla. | 10,635 | 1 | 5.5 | 39 | 6.9 | 30 | 3.5 | 4 | 10.1 | 27 |
| MAJOR TERMINALS | | | | | | | | | | |
| UNITED STATES | 1,253,021 | 2% | 3.6 | 48% | 4.2 | 20% | 2.9 | 4% | 8.0 | 26% |
| SOUTHERN DISTRICT | 238,906 | 3 | 3.2 | 44 | 4.1 | 24 | 4.1 | 5 | 6.9 | 24 |
| Charleston, W.Va. | 3,355 | - | 5.9 | 32 | 4.3 | 32 | 1.9 | 3 | 6.7 | 33 |
| Lynchburg, Va. | 4,848 | 6 | 3.7 | 39 | 4.1 | 35 | 2.2 | 4 | 4.7 | 16 |
| Roanoke, Va. | 26,137 | 10 | 3.4 | 52 | 4.4 | 26 | 2.4 | # | 4.8 | 11 |
| Staunton, Va. | 1,440 | - | 2.7 | 16 | 7.4 | 45 | 2.9 | 5 | 8.1 | 34 |
| Wheeling, W.Va. | 32,799 | 1 | 3.7 | 41 | 4.7 | 30 | 2.9 | 4 | 6.3 | 24 |
| Baton Rouge, La. | 16,760 | # | 4.2 | 42 | 4.2 | 29 | 2.2 | 8 | 5.0 | 21 |
| Charleston, S.C. | 31,289 | # | 4.4 | 39 | 5.2 | 32 | 7.7 | 3 | 8.1 | 26 |
| Columbia, S.C. | 12,602 | 4 | 3.4 | 51 | 3.1 | 15 | 5.2 | 6 | 7.0 | 25 |
| Columbus, Ga. | 8,263 | 4 | 2.9 | 44 | 27.3 | 10 | 9.7 | 5 | 6.5 | 37 |
| Gadsden, Ala. | 3,167 | - | 5.8 | 23 | 9.8 | 35 | 4.7 | 6 | 13.8 | 36 |
| Hamlet, N.C. | 8,114 | 10 | 3.4 | 73 | 3.4 | 4 | - | - | 4.2 | 14 |
| Jackson, Tenn. | 1,476 | - | 5.0 | 37 | - | - | 6.3 | 33 | 9.1 | 30 |
| Lexington, Ky. | 12,189 | # | 5.6 | 40 | 10.3 | 38 | 3.0 | 3 | 7.3 | 19 |
| Mobile, Ala. | 26,935 | - | 5.5 | 35 | 9.9 | 13 | 7.2 | 14 | 14.4 | 38 |
| Savannah, Ga. | 27,256 | - | 2.8 | 50 | 1.7 | 25 | 3.8 | 5 | 3.8 | 20 |
| Valdosta, Ga. | 1,440 | - | - | - | - | - | 17.3 | 8 | 37.7 | 92 |
| Vicksburg, Miss. | 16,324 | 6 | 4.8 | 53 | 6.1 | 15 | - | - | 7.7 | 26 |
| Winston-Salem, N.C. | 4,552 | # | 3.0 | 36 | 2.4 | 37 | .8 | 2 | 4.4 | 24 |

# Less than 1/2%.

Analysis 95.5 Distribution of Switch Engine Time Among Services
Western District - Metropolitan Terminal Districts

| TERMINAL DISTRICTS | AGGREGATE MINUTES | DISTRIBUTION OF SWITCH ENGINE MINUTES: ROAD SERVICE PERCENT OF TOTAL | CLASSIFICATION PER CAR (MINUTES) | CLASSIFICATION PER CENT OF TOTAL | TRANSFER PER CAR (MINUTES) | TRANSFER PER CENT OF TOTAL | INTERCHANGE PER CAR (MINUTES) | INTERCHANGE PER CENT OF TOTAL | INDUSTRIAL PER CAR (MINUTES) | INDUSTRIAL PER CENT OF TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| METROPOLITAN TERMINAL | | | | | | | | | | |
| UNITED STATES | 11,664,685 | 1% | 4.6 | 39% | 4.8 | 25% | 3.8 | 6% | 10.3 | 28% |
| WESTERN DISTRICT | 3,084,323 | 1 | 4.3 | 39 | 5.0 | 22 | 3.9 | 7 | 12.1 | 32 |
| Denver, Colo. | 24,398 | # | 5.6 | 35 | 4.9 | 29 | 3.0 | 5 | 10.3 | 31 |
| Des Moines, Ia. | 34,219 | # | 4.1 | 39 | 5.7 | 29 | 3.0 | 5 | 9.6 | 27 |
| Duluth, Minn. | 120,072 | 2 | 4.2 | 43 | 4.2 | 20 | 9.3 | 1 | 8.2 | 34 |
| Kansas City, Mo. | 119,484 | 4 | 3.9 | 49 | 9.9 | 28 | - | - | 12.1 | 19 |
| Minneapolis, Minn. | 258,620 | 1 | 4.9 | 42 | 5.2 | 30 | 3.3 | 5 | 10.5 | 22 |
| Omaha, Neb. | 103,086 | 1 | 4.3 | 29 | 5.2 | 24 | 3.6 | 10 | 12.2 | 36 |
| St. Paul, Minn. | 113,764 | 2 | 3.4 | 38 | 7.0 | 34 | 2.6 | 4 | 11.8 | 23 |
| St. Louis, Mo. | 355,550 | # | 3.5 | 42 | 5.2 | 23 | 3.2 | 8 | 11.7 | 26 |
| Wichita, Kan. | 21,962 | - | 2.6 | 32 | 4.2 | 15 | 4.4 | 15 | 7.5 | 39 |
| Davenport, Ia. | 124,509 | 1 | 3.5 | 42 | 6.4 | 31 | 5.0 | 5 | 11.0 | 21 |
| Dallas, Texas | 137,368 | # | 3.6 | 39 | 3.8 | 11 | 4.8 | 9 | 12.7 | 41 |
| El Paso, Texas | 5,327 | # | 4.5 | 31 | 6.7 | 44 | 3.6 | 5 | 13.0 | 20 |
| Fort Worth, Texas | 91,638 | - | 4.8 | 53 | 3.7 | 18 | 2.9 | 12 | 8.9 | 16 |
| Houston, Texas | 183,606 | 1 | 3.8 | 41 | 3.2 | 35 | 2.0 | 7 | 4.9 | 16 |
| Little Rock, Ark. | 42,091 | 1 | 3.6 | 54 | 3.3 | 14 | 3.1 | 3 | 9.1 | 28 |
| Oklahoma City, Okla. | 21,364 | # | 3.0 | 36 | 2.8 | 17 | 3.9 | 14 | 8.2 | 33 |
| San Antonio, Tex. | 22,435 | - | 4.3 | 35 | 5.3 | 22 | 4.3 | 8 | 12.2 | 34 |
| Tulsa, Okla. | 62,642 | # | 3.1 | 51 | 3.4 | 6 | 3.8 | 4 | 13.3 | 39 |
| Portland, Ore. | 40,935 | - | 5.0 | 47 | 7.7 | 30 | 9.7 | 5 | 12.0 | 19 |
| Seattle, Wash. | 520,266 | 1 | 7.3 | 32 | 4.6 | 16 | 4.2 | 7 | 15.4 | 45 |
| Spokane, Wash. | 30,486 | 1 | 3.8 | 43 | 6.0 | 12 | 6.9 | 5 | 8.9 | 40 |
| Tacoma, Wash. | 39,450 | # | 4.6 | 45 | 6.2 | 8 | 12.4 | 9 | 10.1 | 38 |
| Los Angeles, Calif. | 238,046 | - | 4.8 | 35 | 8.8 | 8 | 8.2 | 13 | 14.6 | 44 |
| Salt Lake City, Utah | 53,841 | # | 3.6 | 59 | 2.2 | 5 | 6.1 | 9 | 14.5 | 27 |
| San Francisco, Calif. | 319,134 | - | 6.4 | 28 | 5.6 | 27 | 3.6 | 6 | 16.5 | 40 |

# Less than 1/2%.



Analysis 95.6 Distribution of Switch Engine Time Among Services
Western District, Major Terminal Districts - 1938

| TERMINAL DISTRICT | AGGREGATE MINUTES | DISTRIBUTION OF SWITCH ENGINE MINUTES: ROAD SERVICE PERCENT OF TOTAL | CLASSIFICATION PER CAR (MINUTES) | CLASSIFICATION PER CENT OF TOTAL | TRANSFER PER CAR (MINUTES) | TRANSFER PER CENT OF TOTAL | INTERCHANGE PER CAR (MINUTES) | INTERCHANGE PER CENT OF TOTAL | INDUSTRIAL PER CAR (MINUTES) | INDUSTRIAL PER CENT OF TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| MAJOR TERMINAL DISTRICT | | | | | | | | | | |
| UNITED STATES | 1,253,021 | 2% | 3.6 | 48% | 4.2 | 20% | 2.9 | 4% | 8.0 | 26% |
| WESTERN DISTRICT | 825,595 | 2 | 3.7 | 51 | 3.9 | 18 | 2.5 | 4 | 8.0 | 25 |
| Aberdeen, S. D. | 14,545 | 1 | 3.0 | 52 | 3.6 | 15 | 4.0 | 3 | 6.2 | 30 |
| Alliance, Neb. | 17,507 | 1 | 2.1 | 68 | 6.1 | 20 | - | - | 4.8 | 10 |
| Atchison, Kan. | 9,717 | 5 | 4.5 | 51 | 6.2 | 11 | 6.2 | 3 | 10.7 | 30 |
| Austin, Minn. | 12,160 | 2 | 3.0 | 61 | 5.3 | 14 | - | - | 4.5 | 24 |
| Cedar Rapids, Ia. | 33,659 | 1 | 3.3 | 43 | 3.6 | 20 | 3.8 | 7 | 9.9 | 30 |
| Eau Claire, Wis. | 13,543 | # | 4.6 | 26 | 3.9 | 25 | 7.5 | 5 | 8.0 | 44 |
| Grand Rapids, Mich. | 34,443 | 2 | 2.4 | 60 | 5.4 | 22 | 7.3 | 1 | 7.0 | 15 |
| Lady Smith, Wis. | 3,885 | # | 2.8 | 26 | 4.3 | 36 | - | - | 7.1 | 38 |
| McCook, Neb. | 2,832 | 2 | 3.8 | 57 | - | - | - | - | 9.8 | 41 |
| Mason City, Iowa | 15,178 | 3 | 3.1 | 52 | 4.1 | 23 | 1.4 | 2 | 6.2 | 21 |
| Minot, N. D. | 3,935 | - | 1.2 | 4 | 3.0 | 53 | 2.1 | 2 | 1.6 | 41 |
| Norfolk, Neb. | 9,387 | 2 | 3.4 | 69 | - | - | 3.7 | 9 | 9.0 | 20 |
| Rapid City, S. D. | 2,804 | 1 | 7.8 | 29 | 6.4 | 7 | 10.5 | 15 | 9.4 | 48 |
| Red Oak, Ia. | 1,474 | 1 | 4.2 | 50 | 3.0 | 14 | - | - | 9.1 | 35 |
| Pueblo, Colo. | 56,326 | - | 4.0 | 51 | 4.9 | 14 | 8.6 | 8 | 12.9 | 26 |
| St. Joseph, Mo. | 61,810 | 4 | 3.3 | 52 | 3.9 | 18 | 4.8 | 8 | 9.0 | 18 |
| Salina, Kans. | 14,539 | 2 | 3.1 | 49 | 3.1 | 15 | 4.4 | 10 | 5.1 | 25 |
| Sioux City, Iowa | 50,947 | 1 | 6.3 | 56 | 3.9 | 25 | 1.3 | 2 | 7.5 | 17 |
| Sioux Falls, S. D. | 8,278 | # | 4.0 | 30 | 8.6 | 22 | 7.0 | 5 | 7.4 | 43 |
| Thief River Falls, Minn. | 1,903 | # | 2.5 | 41 | 10.6 | 4 | 32.0 | 3 | 13.1 | 51 |
| Wilmar, Minn. | 19,008 | 6 | 2.1 | 74 | - | - | - | - | 2.5 | 20 |
| Albuquerque, N. Mex. | 5,434 | 1 | 4.4 | 36 | 7.0 | 2 | - | - | 17.8 | 61 |
| Alexandria, Ia. | 2,965 | # | 2.5 | 58 | 3.5 | 16 | 2.9 | 5 | 7.4 | 21 |
| Amarillo, Texas | 13,978 | # | 5.4 | 44 | - | - | 5.5 | 7 | 9.7 | 49 |
| Cape Girardeau, Mo. | 1,312 | - | 3.8 | 39 | 3.5 | 16 | 12.0 | 3 | 7.5 | 43 |
| Enid, Okla. | 4,385 | 1 | 2.8 | 46 | 2.3 | 17 | 1.1 | 9 | 6.5 | 27 |
| Fort Smith, Ark. | 2,880 | # | 2.3 | 18 | 6.5 | 47 | 5.2 | 13 | 8.8 | 22 |
| Galveston, Texas | 3,309 | - | 6.6 | 42 | 3.2 | 44 | 1.0 | 5 | 7.7 | 9 |
| Harlingen, Texas | 8,539 | 27 | 3.4 | 38 | 10.3 | 22 | 6.9 | 1 | 6.3 | 12 |
| Laredo, Texas | 5,344 | 4 | 5.0 | 26 | 6.6 | 40 | 3.0 | 8 | 8.0 | 21 |
| Muskogee, Okla. | 6,111 | - | 7.3 | 57 | 6.3 | 18 | 2.8 | 3 | 10.9 | 22 |
| Pine Bluff, Ark. | 7,073 | 7 | 5.5 | 49 | 18.4 | 29 | 6.3 | 2 | 11.4 | 14 |
| Port Arthur, Texas | 4,450 | 2 | 2.2 | 27 | 4.5 | 56 | 2.4 | # | 1.2 | 14 |
| Shreveport, La. | 128,743 | 1 | 4.0 | 43 | 3.3 | 35 | .9 | 4 | 5.9 | 17 |
| Sweetwater, Texas | 2,724 | 3 | 5.6 | 37 | 5.7 | 23 | 1.1 | 3 | 9.1 | 35 |
| Texarkana, Tex. | 9,240 | 3 | 4.2 | 65 | 5.0 | 19 | 1.3 | 1 | 6.6 | 12 |
| Tyler, Texas | 4,189 | 7 | 4.5 | 46 | 6.7 | 25 | 2.8 | 3 | 6.7 | 19 |
| Waco, Texas | 42,303 | 3 | 4.2 | 62 | 4.0 | 11 | 6.2 | 5 | 8.7 | 19 |
| Wichita Falls, Texas | 23,398 | - | 2.1 | 44 | 1.8 | 11 | 1.6 | 4 | 7.7 | 41 |
| Boise, Idaho | 2,880 | - | 3.9 | 21 | 11.9 | 48 | - | 1 | 4.6 | 31 |
| Casper, Wyo. | 15,825 | # | 2.8 | 44 | 1.9 | 19 | .5 | 2 | 4.3 | 34 |
| Ellensburg, Wash. | 9,739 | 1 | 3.8 | 75 | - | - | - | - | 25.0 | 25 |
| Great Falls, Mont. | 21,170 | 1 | 3.8 | 39 | 4.2 | 15 | 2.3 | # | 13.2 | 45 |
| The Dalles, Ore. | 3,666 | - | 4.2 | 46 | - | - | - | - | 13.3 | 54 |
| Fresno, Calif. | 81,282 | - | 6.7 | 60 | - | - | 6.3 | 4 | 18.5 | 36 |
| Grand Junction, Colo. | 13,622 | 4 | 3.3 | 66 | 3.5 | 2 | 11.5 | 3 | 16.0 | 25 |
| Reno-Sparks, Colo. | 7,262 | - | 3.8 | 57 | 7.0 | 9 | 4.2 | 4 | 7.6 | 31 |
| Phoenix, Ariz. | 5,362 | - | 5.8 | 42 | 5.1 | 4 | 5.4 | 2 | 11.3 | 52 |

# Less than 1/2%.

SECTION 100. OVERHEAD COSTS

Analysis 100.1 Carrier Overhead Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | PER TON MILE NET RAIL | PER TON MILE NET WATER | PER TON MILE EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RAIL** | | | | | | | | | | | | | |
| Overhead - Total | $371,390 | 15% | $1,529 | $ 70 | $13.68 | $ .57 | $15.22 | $ .95 | $.0359 | $.0005 | $.0016 | - | $.0008 |
| Administration | 178,085 | 7 | 733 | 33 | 6.57 | .28 | 7.30 | .46 | .0172 | .0002 | .0008 | - | .0004 |
| Traffic | 63,238 | 2 | 260 | 12 | 2.33 | .10 | 2.59 | .16 | .0061 | .0001 | .0008 | - | .0001 |
| General | 114,847 | 5 | 473 | 22 | 4.24 | .18 | 4.71 | .29 | .0111 | .0002 | .0005 | - | .0003 |
| Taxes | 193,304 | 8 | 796 | 36 | 7.13 | .30 | 7.92 | .49 | .0187 | .0003 | .0008 | - | .0004 |
| **WATER** | | | | | | | | | | | | | |
| **CARLOT** | | | | | | | | | | | | | |
| Overhead - Total | $ 27,164 | 27% | $ 159 | $ 250 | | - $1.45 | $ 9.66 | $1.31 | | | - $.0015 | $.0008 | - |
| Administration | 26,220 | 26 | 153 | 241 | | - 1.40 | 9.33 | 1.27 | | | - .0014 | .0008 | - |
| Traffic | 11,619 | 11 | 68 | 107 | | - .62 | 4.13 | .56 | | | - .0006 | .0004 | - |
| General | 14,601 | 14 | 85 | 134 | | - .78 | 5.19 | .71 | | | - .0008 | .0004 | - |
| Taxes | 944 | 1 | 6 | 9 | | - .05 | .34 | .05 | | | - .0001 | .0000 | - |
| **CARGO** | | | | | | | | | | | | | |
| Overhead - Total | $ 3,120 | 18% | $ 34 | $ 789 | | - $ .11 | $ 4.34 | $ .70 | | | - $.0002 | $.0002 | - |
| Administration | 2,942 | 17 | 32 | 744 | | - .10 | 4.09 | .66 | | | - .0002 | .0001 | - |
| Traffic | 502 | 3 | 5 | 127 | | - .02 | .70 | .11 | | | - .0000 | .0000 | - |
| General | 2,439 | 14 | 26 | 617 | | - .09 | 3.39 | .55 | | | - .0001 | .0001 | - |
| Taxes | 178 | 1 | 2 | 45 | | - .01 | .25 | .04 | | | - .0000 | .0000 | - |
| **PIPE** | | | | | | | | | | | | | |
| Overhead - Total | $ 25,709 | 12% | $ 277 | - | | - $ .31 | - | - | - | | - $.0008# | - | - |
| Administration | 9,657 | 5 | 104 | - | | - .12 | - | - | - | | - .0003# | - | - |
| Traffic | - | - | - | - | | - | - | - | - | | - | - | - |
| General | 9,657 | 5 | 104 | - | | - .12 | - | - | - | | - .0003# | - | - |
| Taxes | 16,051 | 8 | 173 | - | | - .19 | - | - | - | | - .0005# | - | - |

# Pipe distance



SECTION 100. OVERHEAD COSTS

Analysis 100.2 Water Overhead Unit Costs Carlot Carriers - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | PER TON MILE NET RAIL | PER TON MILE NET WATER | PER TON MILE EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CARLOT** | | | | | | | | | | | | | |
| **OVERHEAD** | | | | | | | | | | | | | |
| United States | $ 27,164 | 27% | $159 | $ 250 | - | $1.45 | $9.66 | $1.31 | - | - | $.0015 | $.0008 | - |
| Atlantic Coast | 4,439 | 18 | 198 | 311 | - | .95 | 6.21 | .78 | - | - | .0025 | .0022 | - |
| Atlantic Gulf | 2,319 | 17 | 89 | 2,031 | - | 1.01 | 8.19 | .82 | - | - | .0009 | .0007 | - |
| Intercoastal | 12,403 | 32 | 141 | 28,578 | - | 3.17 | 15.41 | 2.10 | - | - | .0012 | .0005 | - |
| Inland Waterways | 1,377 | 16 | 145 | 2,037 | - | .60 | 6.20 | 1.63 | - | - | .0001 | .0001 | - |
| Great Lakes | 2,591 | 35 | 237 | 205 | - | .86 | 11.00 | 1.38 | - | - | .0023 | .0020 | - |
| Pacific Coast | 4,034 | 43 | 286 | 51 | - | 1.56 | 7.31 | 1.15 | - | - | .0039 | .0042 | - |
| **ADMINISTRATION** | | | | | | | | | | | | | |
| United States | $ 26,220 | 26% | $153 | $ 241 | - | $1.40 | $9.33 | $1.27 | - | - | $.0014 | $.0008 | - |
| Atlantic Coast | 3,851 | 16 | 172 | 270 | - | .82 | 5.39 | .68 | - | - | .0022 | .0019 | - |
| Atlantic Gulf | 2,241 | 17 | 86 | 1,963 | - | .98 | 7.91 | .79 | - | - | .0008 | .0007 | - |
| Intercoastal | 12,383 | 32 | 141 | 28,532 | - | 3.16 | 15.41 | 2.09 | - | - | .0012 | .0005 | - |
| Inland Waterways | 1,330 | 16 | 140 | 1,968 | - | .58 | 5.99 | 1.57 | - | - | .0001 | .0001 | - |
| Great Lakes | 2,490 | 33 | 224 | 194 | - | .82 | 10.40 | 1.30 | - | - | .0021 | .0019 | - |
| Pacific Coast | 3,965 | 42 | 281 | 50 | - | 1.53 | 7.18 | 1.13 | - | - | .0039 | .0041 | - |
| **TRAFFIC** | | | | | | | | | | | | | |
| United States | $ 11,619 | 11% | $ 68 | $ 107 | - | $ .62 | $4.13 | $ .56 | - | - | $.0006 | $.0004 | - |
| Atlantic Coast | 1,995 | 8 | 89 | 140 | - | .43 | 2.79 | .35 | - | - | .0011 | .0010 | - |
| Atlantic Gulf | 1,552 | 12 | 59 | 1,359 | - | .68 | 5.48 | .55 | - | - | .0006 | .0005 | - |
| Intercoastal | 4,891 | 13 | 56 | 11,270 | - | 1.25 | 6.09 | .83 | - | - | .0005 | .0002 | - |
| Inland Waterways | 446 | 5 | 47 | 659 | - | .19 | 2.01 | .53 | - | - | .0000 | .0000 | - |
| Great Lakes | 889 | 12 | 81 | 70 | - | .30 | 3.77 | .47 | - | - | .0008 | .0007 | - |
| Pacific Coast | 1,846 | 20 | 131 | 23 | - | .71 | 3.34 | .52 | - | - | .0018 | .0019 | - |
| **GENERAL** | | | | | | | | | | | | | |
| United States | $ 14,601 | 14% | $ 85 | $ 134 | - | $ .78 | $5.19 | $ .71 | - | - | $.0008 | $.0004 | - |
| Atlantic Coast | 1,855 | 7 | 83 | 130 | - | .40 | 2.59 | .33 | - | - | .0011 | .0009 | - |
| Atlantic Gulf | 690 | 5 | 26 | 604 | - | .30 | 2.44 | .24 | - | - | .0003 | .0002 | - |
| Intercoastal | 7,492 | 19 | 85 | 17,262 | - | 1.91 | 9.32 | 1.27 | - | - | .0007 | .0003 | - |
| Inland Waterways | 885 | 10 | 93 | 1,309 | - | .39 | 3.99 | 1.05 | - | - | .0001 | .0000 | - |
| Great Lakes | 1,561 | 21 | 143 | 124 | - | .52 | 6.63 | .83 | - | - | .0014 | .0012 | - |
| Pacific Coast | 2,119 | 22 | 150 | 27 | - | .82 | 3.84 | .60 | - | - | .0021 | .0022 | - |
| **TAXES** | | | | | | | | | | | | | |
| United States | $ 944 | 1% | $ 6 | $ 9 | - | $ .05 | $ .34 | $ .05 | - | - | $.0001 | $.0000 | - |
| Atlantic Coast | 589 | 2 | 26 | 41 | - | .13 | .82 | .10 | - | - | .0003 | .0003 | - |
| Atlantic Gulf | 78 | 1 | 3 | 68 | - | .03 | .28 | .03 | - | - | .0000 | .0000 | - |
| Intercoastal | 20 | 0 | 0 | 46 | - | .01 | .02 | .00 | - | - | .0000 | .0000 | - |
| Inland Waterways | 47 | 1 | 5 | 59 | - | .02 | .21 | .01 | - | - | .0000 | .0000 | - |
| Great Lakes | 141 | 2 | 13 | 11 | - | .05 | .60 | .07 | - | - | .0001 | .0001 | - |
| Pacific Coast | 69 | 1 | 5 | 1 | - | .03 | .13 | .02 | - | - | .0001 | .0001 | - |

SECTION 100. OVERHEAD COSTS

Analysis 100.3 Water Overhead Unit Costs Cargo Carriers - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | PER TON MILE NET RAIL | PER TON MILE NET WATER | PER TON MILE EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CARGO | | | | | | | | | | | | | |
| OVERHEAD | | | | | | | | | | | | | |
| United States | $ 3,120 | 18% | $ 34 | 789 | - | $ .11 | $ 4.34 | $ .70 | - | - | $.0002 | $.0002 | - |
| Atlantic Coast | 195 | 15 | 27 | 955 | - | .15 | 5.46 | .90 | - | - | .0002 | .0002 | - |
| Atlantic Gulf | 3 | 0 | 0 | 75 | - | .01 | .09 | .02 | - | - | .0000 | .0000 | - |
| Intercoastal | 33 | 18 | 5 | 2,082 | - | .69 | .95 | .17 | - | - | .0002 | .0001 | - |
| Inland Waterways | 86 | 8 | 21 | 372 | - | .15 | 1.27 | .35 | - | - | .0002 | .0001 | - |
| Great Lakes | 2,408 | 22 | 49 | 1,105 | - | .10 | 6.68 | .84 | - | - | .0002 | .0002 | - |
| Pacific Coast | 96 | 25 | 17 | 99 | - | .59 | .72 | .22 | - | - | .0015 | .0015 | - |
| ADMINISTRATION | | | | | | | | | | | | | |
| United States | $ 2,912 | 17% | $ 32 | 744 | - | $ .10 | $ 4.09 | $ .66 | - | - | $.0002 | $.0001 | - |
| Atlantic Coast | 153 | 14 | 24 | 874 | - | .13 | 5.00 | .83 | - | - | .0002 | .0002 | - |
| Atlantic Gulf | 3 | 0 | 0 | 74 | - | .01 | .09 | .02 | - | - | .0000 | .0000 | - |
| Intercoastal | 33 | 18 | 5 | 2,082 | - | .69 | .95 | .17 | - | - | .0002 | .0001 | - |
| Inland Waterways | 60 | 6 | 15 | 261 | - | .10 | .88 | .24 | - | - | .0002 | .0001 | - |
| Great Lakes | 2,300 | 21 | 47 | 1,055 | - | .10 | 6.38 | .80 | - | - | .0001 | .0001 | - |
| Pacific Coast | 93 | 25 | 17 | 96 | - | .58 | .69 | .21 | - | - | .0014 | .0014 | - |
| TRAFFIC | | | | | | | | | | | | | |
| United States | $ 502 | 3% | $ 5 | 127 | - | $ .02 | $ .70 | $ .11 | - | - | $.0000 | $.0000 | - |
| Atlantic Coast | 53 | 2 | 3 | 103 | - | .02 | .58 | .10 | - | - | .0000 | .0000 | - |
| Atlantic Gulf | 3 | 0 | 0 | 74 | - | .01 | .09 | .02 | - | - | .0000 | .0000 | - |
| Intercoastal | 10 | 6 | 2 | 698 | - | .21 | .29 | .05 | - | - | .0001 | .0000 | - |
| Inland Waterways | 32 | 3 | 8 | 137 | - | .05 | .47 | .13 | - | - | .0001 | .0000 | - |
| Great Lakes | 396 | 4 | 8 | 182 | - | .02 | 1.10 | .14 | - | - | .0000 | .0000 | - |
| Pacific Coast | 8 | 2 | 2 | 9 | - | .05 | .06 | .02 | - | - | .0001 | .0001 | - |
| GENERAL | | | | | | | | | | | | | |
| United States | $ 2,439 | 11% | $ 26 | 617 | - | $ .09 | $ 3.39 | $ .55 | - | - | $.0001 | $.0001 | - |
| Atlantic Coast | 399 | 12 | 22 | 771 | - | .12 | 4.40 | .73 | - | - | .0002 | .0002 | - |
| Atlantic Gulf | 0 | 0 | 0 | 0 | - | 0 | .00 | .00 | - | - | .0000 | .0000 | - |
| Intercoastal | 23 | 13 | 4 | 1,144 | - | .48 | .67 | .12 | - | - | .0002 | .0001 | - |
| Inland Waterways | 28 | 3 | 7 | 124 | - | .05 | .41 | .11 | - | - | .0001 | .0000 | - |
| Great Lakes | 1,904 | 17 | 39 | 873 | - | .08 | 5.28 | .66 | - | - | .0001 | .0001 | - |
| Pacific Coast | 85 | 22 | 15 | 87 | - | .52 | .63 | .19 | - | - | .0013 | .0013 | - |
| TAXES | | | | | | | | | | | | | |
| United States | $ 178 | 1% | $ 2 | 45 | - | $ .01 | $ .25 | $ .04 | - | - | $.0000 | $.0000 | - |
| Atlantic Coast | 42 | 1 | 2 | 81 | - | .01 | .46 | .08 | - | - | .0000 | .0000 | - |
| Atlantic Gulf | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| Intercoastal | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| Inland Waterways | 26 | 3 | 6 | 111 | - | .04 | .38 | .11 | - | - | .0001 | .0000 | - |
| Great Lakes | 108 | 1 | 2 | 50 | - | .00 | .30 | .04 | - | - | .0000 | .0000 | - |
| Pacific Coast | 3 | 1 | 1 | 3 | - | .02 | .02 | .01 | - | - | .0000 | .0000 | - |



SECTION 100. OVERHEAD COSTS

Analysis 100.4 Pipe Overhead Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | NET TON | NET TON MILE |
|---|---|---|---|---|---|
| OVERHEAD | | | | | |
| United States | $ 25,709 | 12% | $ 277 | $ .31 | $ .0008 |
| North Atlantic Coast | 1,588 | 17 | 106 | .55 | .0015 |
| Great Lakes Southwest | 13,617 | 14 | 304 | .54 | .0006 |
| Southwest Gulf | 10,534 | 10 | 317 | .19 | .0011 |
| ADMINISTRATION | | | | | |
| United States | $ 9,657 | 5% | $ 104 | $ .12 | $ .0003 |
| North Atlantic Coast | 854 | 9 | 58 | .30 | .0008 |
| Great Lakes Southwest | 4,178 | 4 | 93 | .19 | .0002 |
| Southwest Gulf | 4,624 | 5 | 139 | .08 | .0005 |
| TAXES | | | | | |
| United States | $ 16,052 | 8% | $ 173 | $ .19 | $ .0005 |
| North Atlantic Coast | 704 | 8 | 48 | .25 | .0007 |
| Great Lakes Southwest | 9,439 | 9 | 211 | .38 | .0004 |
| Southwest Gulf | 5,909 | 6 | 178 | .11 | .0006 |

## SECTION 100. OVERHEAD COSTS

### Analysis 100.5 Rail Overhead Unit Costs - 1932

| | AGGREGATE (MILLIONS) | PER CENT OF TOTAL COST | PER ROUTE MILE | PER SCHEDULE | PER SCHEDULE MILE | PER SCHEDULE HOUR | PER VEHICLE ORIG. OR EQUATED | PER VEHICLE MILE | PER NET TON | PER NET TON MILE | PER EQUATED TON MILE | PER GROSS TON MILE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OVERHEAD * | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 371,390 | 19% | 1,529 | 69.64 | 15.22 | .95 | 13.68 | .03594 | .57 | .00158 | .00081 | .00050 |
| New England | 14,839 | 19 | 1,944 | 59.81 | 17.41 | 1.20 | 9.20 | .04289 | .58 | .00246 | .00127 | .00069 |
| Trunk Line | 81,714 | 19 | 3,788 | 64.72 | 19.30 | 1.38 | 13.39 | .04345 | .50 | .00169 | .00088 | .00058 |
| Central | 86,962 | 19 | 2,267 | 81.95 | 16.79 | 1.01 | 12.70 | .03537 | .50 | .00147 | .00076 | .00048 |
| Pocahontas | 18,522 | 20 | 2,392 | 62.74 | 14.22 | 1.09 | 11.03 | .03317 | .27 | .00087 | .00045 | .00037 |
| Southeastern | 41,452 | 19 | 1,189 | 65.37 | 13.38 | .77 | 11.07 | .03602 | .66 | .00159 | .00082 | .00051 |
| Western Trunk Line | 62,757 | 19 | 1,060 | 68.07 | 13.54 | .81 | 13.12 | .03471 | .68 | .00179 | .00092 | .00050 |
| Southwestern | 28,386 | 19 | 796 | 60.85 | 11.94 | .69 | 13.51 | .03145 | .66 | .00160 | .00083 | .00044 |
| Pacific Northwest | 15,764 | 19 | 795 | 78.60 | 13.09 | .81 | 21.71 | .02976 | .95 | .00153 | .00079 | .00042 |
| Pacific Southwest | 20,993 | 19 | 1,168 | 86.49 | 13.78 | .85 | 19.96 | .03009 | 1.19 | .00179 | .00092 | .00047 |
| ADMINISTRATION | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 178,085 | 9% | 733 | 33.39 | 7.30 | .46 | 6.57 | .01723 | .28 | .00076 | .00039 | .00024 |
| New England | 7,116 | 9 | 932 | 28.68 | 8.35 | .57 | 4.41 | .02056 | .27 | .00118 | .00061 | .00033 |
| Trunk Line | 39,183 | 9 | 1,817 | 31.05 | 9.25 | .66 | 6.42 | .02083 | .24 | .00081 | .00042 | .00028 |
| Central | 41,699 | 9 | 1,087 | 39.30 | 8.05 | .48 | 6.09 | .01696 | .24 | .00071 | .00036 | .00023 |
| Pocahontas | 8,882 | 10 | 1,147 | 30.09 | 6.82 | .52 | 5.29 | .01590 | .13 | .00042 | .00022 | .00018 |
| Southeastern | 19,877 | 9 | 570 | 31.34 | 6.42 | .37 | 6.75 | .01727 | .32 | .00076 | .00039 | .00024 |
| Western Trunk Line | 30,093 | 9 | 508 | 32.64 | 6.49 | .39 | 6.29 | .01664 | .32 | .00086 | .00044 | .00024 |
| Southwestern | 13,612 | 9 | 382 | 29.18 | 5.73 | .33 | 6.48 | .01508 | .32 | .00077 | .00040 | .00021 |
| Pacific Northwest | 7,559 | 9 | 381 | 37.69 | 6.28 | .39 | 10.41 | .01127 | .45 | .00073 | .00038 | .00020 |
| Pacific Southwest | 10,066 | 9 | 560 | 41.47 | 6.61 | .41 | 9.57 | .01143 | .57 | .00086 | .00044 | .00022 |
| GENERAL | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 114,847 | 6% | 473 | 21.53 | 4.71 | .29 | 4.24 | .01111 | .18 | .00069 | .00025 | .00015 |
| New England | 4,589 | 6 | 601 | 18.50 | 5.38 | .37 | 2.84 | .01326 | .18 | .00076 | .00039 | .00021 |
| Trunk Line | 25,269 | 6 | 1,171 | 20.02 | 5.97 | .43 | 4.24 | .01344 | .15 | .00052 | .00027 | .00018 |
| Central | 26,892 | 6 | 701 | 25.34 | 5.19 | .31 | 3.93 | .01094 | .16 | .00045 | .00024 | .00015 |
| Pocahontas | 5,728 | 6 | 740 | 19.40 | 4.40 | .34 | 3.41 | .01026 | .08 | .00027 | .00014 | .00011 |
| Southeastern | 12,818 | 6 | 368 | 20.21 | 4.14 | .24 | 4.35 | .01114 | .20 | .00069 | .00025 | .00016 |
| Western Trunk Line | 19,407 | 6 | 328 | 21.05 | 4.19 | .25 | 4.06 | .01073 | .21 | .00055 | .00029 | .00015 |
| Southwestern | 8,778 | 6 | 246 | 18.84 | 3.69 | .21 | 4.18 | .00973 | .20 | .00069 | .00026 | .00014 |
| Pacific Northwest | 4,875 | 6 | 246 | 24.31 | 4.05 | .25 | 6.71 | .00920 | .29 | .00047 | .00024 | .00013 |
| Pacific Southwest | 6,492 | 6 | 361 | 26.75 | 4.26 | .26 | 6.17 | .00930 | .37 | .00055 | .00029 | .00014 |
| TRAFFIC | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 63,238 | 3% | 260 | 11.86 | 2.59 | .16 | 2.33 | .00612 | .10 | .00027 | .00014 | .00009 |
| New England | 2,527 | 3 | 331 | 10.18 | 2.97 | .20 | 1.57 | .00730 | .09 | .00042 | .00022 | .00012 |
| Trunk Line | 13,914 | 3 | 645 | 11.02 | 3.29 | .24 | 2.28 | .00740 | .08 | .00029 | .00015 | .00010 |
| Central | 14,807 | 3 | 386 | 13.95 | 2.86 | .17 | 2.16 | .00602 | .09 | .00025 | .00013 | .00008 |
| Pocahontas | 3,154 | 3 | 407 | 10.68 | 2.42 | .19 | 1.88 | .00565 | .05 | .00015 | .00008 | .00006 |
| Southeastern | 7,058 | 3 | 203 | 11.13 | 2.28 | .13 | 2.40 | .00613 | .11 | .00027 | .00014 | .00009 |
| Western Trunk Line | 10,686 | 3 | 181 | 11.59 | 2.31 | .14 | 2.23 | .00591 | .12 | .00030 | .00016 | .00009 |
| Southwestern | 4,833 | 3 | 136 | 10.34 | 2.03 | .12 | 2.30 | .00536 | .11 | .00027 | .00014 | .00008 |
| Pacific Northwest | 2,684 | 3 | 135 | 13.38 | 2.23 | .14 | 3.70 | .00507 | .16 | .00026 | .00013 | .00007 |
| Pacific Southwest | 3,575 | 3 | 199 | 14.72 | 2.35 | .14 | 3.40 | .00512 | .20 | .00030 | .00016 | .00008 |
| TAXES | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 193,305 | 10% | 796 | 36.25 | 7.92 | .49 | 7.13 | .01871 | .30 | .00082 | .00042 | .00026 |
| New England | 7,724 | 10 | 1,012 | 31.13 | 9.06 | .62 | 4.79 | .02232 | .31 | .00128 | .00066 | .00036 |
| Trunk Line | 42,532 | 10 | 1,972 | 33.68 | 10.04 | .72 | 6.97 | .02262 | .26 | .00088 | .00046 | .00030 |
| Central | 45,263 | 10 | 1,180 | 42.65 | 8.74 | .53 | 6.61 | .01841 | .26 | .00077 | .00040 | .00025 |
| Pocahontas | 9,641 | 10 | 1,245 | 32.66 | 7.40 | .57 | 5.74 | .01726 | .14 | .00045 | .00023 | .00019 |
| Southeastern | 21,575 | 10 | 639 | 34.03 | 6.96 | .40 | 7.32 | .01875 | .34 | .00083 | .00043 | .00026 |
| Western Trunk Line | 32,664 | 10 | 552 | 35.43 | 7.05 | .42 | 6.83 | .01807 | .35 | .00093 | .00048 | .00026 |
| Southwestern | 14,775 | 10 | 411 | 31.67 | 6.21 | .36 | 7.03 | .01637 | .34 | .00083 | .00043 | .00023 |
| Pacific Northwest | 8,205 | 10 | 411 | 40.91 | 6.82 | .42 | 11.30 | .01549 | .49 | .00079 | .00041 | .00022 |
| Pacific Southwest | 10,927 | 10 | 608 | 45.02 | 7.17 | .44 | 10.39 | .01566 | .62 | .00093 | .00048 | .00024 |

* Does not include Loss and Damage Freight.



## SECTION 104. LOCATION COSTS

### Analysis 104.1 Carrier Location Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | PER TON MILE NET RAIL | PER TON MILE NET WATER | PER TON MILE EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAIL | | | | | | | | | | | | | |
| Total | $1,965,979 | 77% | $8,096 | $ 369 | $ 72.42 | $ 3.04 | $ 80.55 | $ 5.03 | $.1903 | $.0026 | $.0083 | - | $.0043 |
| Yard | 1,067,714 | 42 | 4,397 | 200 | 39.33 | 1.65 | 43.75 | 2.73 | .1034 | .0014 | .0045 | - | .0023 |
| Road | 898,265 | 35 | 3,699 | 168 | 33.09 | 1.38 | 36.80 | 2.30 | .0869 | .0012 | .0038 | - | .0020 |
| WATER | | | | | | | | | | | | | |
| CARLOT | | | | | | | | | | | | | |
| Total | $ 109,540 | 107% | $ 640 | $1,006 | - | $ 5.84 | $ 38.97 | $ 5.30 | - | - | $.0060 | $.0034 | - |
| Yard | 28,620 | 28 | 167 | 263 | - | 1.52 | 10.18 | 1.38 | - | - | .0015 | .0009 | - |
| Road | 80,920 | 79 | 473 | 743 | - | 4.32 | 28.79 | 3.92 | - | - | .0045 | .0025 | - |
| CARGO | | | | | | | | | | | | | |
| Total | $ 21,929 | 128% | $ 236 | $5,549 | - | $ .77 | $ 30.50 | $ 4.91 | - | - | $.0012 | $.0011 | - |
| Yard | 2,212 | 13 | 24 | 560 | - | .08 | 3.08 | .50 | - | - | .0001 | .0001 | - |
| Road | 19,717 | 115 | 212 | 4,989 | - | .69 | 27.42 | 4.41 | - | - | .0010 | .0010 | - |
| PIPE | | | | | | | | | | | | | |
| Total | $ 101,965 | 48% | $1,099 | - | - | $ 1.23 | - | - | - | - | $.0032 ♦ | - | - |
| Yard | 34,779 | 16 | 375 | - | - | .42 | - | - | - | - | .0011♦ | - | - |
| Road | 67,186 | 32 | 724 | - | - | .81 | - | - | - | - | .0021♦ | - | - |

♦ Pipe distance

SECTION 104. LOCATION COSTS

Analysis 104.2 Water Location Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | NET RAIL | NET WATER | EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CARLOT | | | | | | | | | | | | | |
| STATION | | | | | | | | | | | | | |
| United States | $16,878 | 16% | $ 99 | $ 155 | - | $ .90 | $ 6.00 | $ .82 | - | - | $.0009 | $.0005 | - |
| Atlantic Coast | 3,948 | 16 | 176 | 277 | - | .84 | 5.52 | .69 | - | - | .0022 | .0020 | - |
| Atlantic Gulf | 1,986 | 15 | 76 | 1,739 | - | .87 | 7.01 | .70 | - | - | .0007 | .0006 | - |
| Intercoastal | 5,997 | 15 | 68 | 13,818 | - | 1.53 | 7.46 | 1.01 | - | - | .0006 | .0003 | - |
| Inland Waterways | 2,028 | 24 | 214 | 3,000 | - | .88 | 9.14 | 2.40 | - | - | .0014 | .0009 | - |
| Great Lakes | 1,204 | 16 | 110 | 95 | - | .40 | 5.11 | .64 | - | - | .0011 | .0009 | - |
| Pacific Coast | 1,714 | 18 | 122 | 22 | - | .66 | 3.11 | .49 | - | - | .0017 | .0018 | - |
| DOCK | | | | | | | | | | | | | |
| United States | $11,742 | 11% | $ 69 | $ 108 | - | $ .63 | $ 4.18 | $ .57 | - | - | $.0006 | $.0004 | - |
| Atlantic Coast | 4,072 | 16 | 182 | 286 | - | .87 | 5.69 | .72 | - | - | .0023 | .0020 | - |
| Atlantic Gulf | 2,357 | 18 | 90 | 2,064 | - | 1.03 | 8.32 | .83 | - | - | .0009 | .0007 | - |
| Intercoastal | 2,692 | 7 | 31 | 6,203 | - | .69 | 3.35 | .46 | - | - | .0003 | .0001 | - |
| Inland Waterways | 1,178 | 14 | 124 | 1,743 | - | .51 | 5.31 | 1.39 | - | - | .0008 | .0005 | - |
| Great Lakes | 595 | 8 | 54 | 47 | - | .20 | 4.53 | .32 | - | - | .0005 | .0005 | - |
| Pacific Coast | 848 | 9 | 60 | 11 | - | .33 | 1.54 | .24 | - | - | .0008 | .0009 | - |
| ROAD | | | | | | | | | | | | | |
| United States | $80,920 | 79% | $473 | $ 743 | - | $ 4.31 | $ 28.79 | $ 3.91 | - | - | $.0044 | $.0024 | - |
| Atlantic Coast | 15,357 | 62 | 686 | 1,077 | - | 3.28 | 21.47 | 2.70 | - | - | .0087 | .0077 | - |
| Atlantic Gulf | 10,831 | 81 | 414 | 9,484 | - | 4.74 | 38.25 | 3.82 | - | - | .0040 | .0032 | - |
| Intercoastal | 33,567 | 86 | 381 | 77,344 | - | 8.57 | 41.78 | 5.68 | - | - | .0034 | .0015 | - |
| Inland Waterways | 4,936 | 58 | 520 | 7,302 | - | 2.15 | 22.24 | 5.83 | - | - | .0033 | .0021 | - |
| Great Lakes | 6,532 | 88 | 596 | 517 | - | 2.18 | 27.74 | 3.47 | - | - | .0057 | .0051 | - |
| Pacific Coast | 9,696 | 103 | 688 | 122 | - | 3.74 | 17.57 | 2.76 | - | - | .0094 | .0101 | - |
| CARGO | | | | | | | | | | | | | |
| STATION | | | | | | | | | | | | | |
| United States | $ 1,554 | 9% | $ 17 | $ 393 | - | $ .05 | $ 2.16 | $ .35 | - | - | $.0001 | $.0001 | - |
| Atlantic Coast | 51 | 2 | 3 | 99 | - | .02 | .56 | .09 | - | - | .0000 | .0000 | - |
| Atlantic Gulf | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| Intercoastal | 63 | 35 | 10 | 3,957 | - | 1.31 | 1.82 | .33 | - | - | .0000 | .0000 | - |
| Inland Waterways | 10 | 1 | 2 | 42 | - | .02 | .15 | .04 | - | - | .0000 | .0000 | - |
| Great Lakes | 1,321 | 12 | 27 | 606 | - | .06 | 3.67 | .46 | - | - | .0000 | .0000 | - |
| Pacific Coast | 109 | 29 | 19 | 112 | - | .67 | .81 | .25 | - | - | .0000 | .0000 | - |
| DOCK | | | | | | | | | | | | | |
| United States | $ 659 | 4% | $ 7 | $ 167 | - | $ .02 | $ .92 | $ .15 | - | - | $.0000 | $.0000 | - |
| Atlantic Coast | 440 | 13 | 24 | 950 | - | .13 | 4.86 | .80 | - | - | .0000 | .0000 | - |
| Atlantic Gulf | 6 | 0 | 1 | 148 | - | .01 | .19 | .04 | - | - | .0000 | .0000 | - |
| Intercoastal | 47 | 26 | 8 | 2,953 | - | .98 | 1.36 | .24 | - | - | .0005 | .0002 | - |
| Inland Waterways | 18 | 2 | 4 | 79 | - | .03 | .27 | .07 | - | - | .0000 | .0000 | - |
| Great Lakes | 147 | 1 | 3 | 67 | - | .01 | .41 | .05 | - | - | .0001 | .0001 | - |
| Pacific Coast | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0016 | .0016 | - |
| ROAD | | | | | | | | | | | | | |
| United States | $19,717 | 115% | $212 | $ 4,989 | - | .69 | $ 27.42 | $ 4.41 | - | - | $.0010 | $.0010 | - |
| Atlantic Coast | 3,805 | 116 | 206 | 7,345 | - | 1.13 | 42.00 | 6.95 | - | - | .0002 | .0002 | - |
| Atlantic Gulf | 989 | 81 | 108 | 26,021 | - | 1.90 | 31.31 | 6.14 | - | - | .0000 | .0000 | - |
| Intercoastal | 207 | 113 | 34 | 12,950 | - | 4.29 | 5.99 | 1.07 | - | - | .0003 | .0002 | - |
| Inland Waterways | 445 | 44 | 108 | 1,934 | - | .76 | 6.56 | 1.81 | - | - | .0001 | .0000 | - |
| Great Lakes | 13,613 | 123 | 275 | 6,245 | - | .57 | 37.78 | 4.73 | - | - | .0000 | .0000 | - |
| Pacific Coast | 658 | 174 | 118 | 678 | - | 4.97 | 4.91 | 1.49 | - | - | .0000 | .0000 | - |



SECTION 104. LOCATION COSTS

Analysis 104.3 Pipe Location Unit Costs

| | AGGREGATE (000) | REVENUE | ROUTE MILE | NET TON | NET TON MILE |
|---|---|---|---|---|---|
| TOTAL | | | | | |
| United States | $101,964,942 | 48% | $ 1,098.96 | $ 1.23 | $ .0032 |
| North Atlantic Coast | 6,757,043 | 73 | 459.00 | 2.39 | .0064 |
| Great Lakes Southwest | 48,485,271 | 48 | 1,083.00 | 1.93 | .0023 |
| Southwest Gulf | 46,722,628 | 46 | 1,404.00 | .85 | .0049 |
| YARD | | | | | |
| United States | $ 34,779,219 | 16% | $ 374.84 | $ .42 | $ .0011 |
| North Atlantic Coast | 3,021,601 | 33 | 205.23 | 1.07 | .0029 |
| Great Lakes Southwest | 15,002,822 | 15 | 335.02 | .60 | .0007 |
| Southwest Gulf | 16,754,796 | 16 | 503.48 | .31 | .0018 |
| ROAD | | | | | |
| United States | $ 67,185,723 | 32% | $ 724.12 | $ .81 | $ .0021 |
| North Atlantic Coast | 3,735,442 | 40 | 253.71 | 1.32 | .0035 |
| Great Lakes Southwest | 33,482,449 | 33 | 747.68 | 1.33 | .0016 |
| Southwest Gulf | 29,967,832 | 29 | 900.53 | .55 | .0032 |

## SECTION 104. LOCATION OF COSTS

### Analysis 104.4 Rail Location Unit Costs - 1932

| | AGGREGATE (000) | PER CENT OF TOTAL COST | PER ROUTE MILE | PER SCHED-ULE | PER VEHI-CLE | PER NET TON | PER SCHED-ULE HOUR | PER SCHED-ULE MILE | PER VEHI-CLE MILE | TON MILE EQUAT-ED NET | TON MILE EQUAT-ED | TON MILE GROSS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TOTAL** | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 1,965,979 | 100% | 8,096 | 368.64 | 72.42 | 3.04 | 80.55 | 5.03 | .1903 | .00834 | .00431 | .00263 |
| Eastern | 976,268 | 100 | 14,450 | 379.58 | 67.04 | 2.69 | 95.09 | 6.20 | .2084 | .00861 | .00446 | .00285 |
| Southern | 307,560 | 100 | 7,220 | 330.97 | 66.48 | 2.32 | 69.90 | 4.35 | .1799 | .00650 | .00336 | .00233 |
| Western | 682,151 | 100 | 5,142 | 372.40 | 78.74 | 4.01 | 70.04 | 4.19 | .1732 | .00911 | .00471 | .00251 |
| New England | 79,483 | 100 | 10,413 | 320.36 | 49.28 | 3.07 | 93.27 | 6.42 | .2297 | .01317 | .00681 | .00372 |
| Trunk Line | 431,366 | 100 | 19,998 | 431.62 | 70.68 | 2.62 | 101.88 | 7.31 | .2294 | .00894 | .00462 | .00308 |
| Central | 465,419 | 100 | 12,133 | 438.60 | 67.98 | 2.69 | 89.84 | 5.40 | .1893 | .00787 | .00407 | .00256 |
| Pocahontas | 93,429 | 100 | 12,063 | 316.49 | 55.62 | 1.35 | 71.73 | 5.49 | .1673 | .00439 | .00227 | .00187 |
| Southeastern | 214,131 | 100 | 6,144 | 337.70 | 72.66 | 3.40 | 69.12 | 3.99 | .1861 | .00823 | .00425 | .00262 |
| Western Trunk Line | 333,559 | 100 | 5,634 | 361.79 | 69.73 | 3.60 | 71.97 | 4.31 | .1845 | .00951 | .00492 | .00266 |
| Southwestern | 153,396 | 100 | 4,301 | 328.81 | 73.00 | 3.56 | 64.53 | 3.72 | .1700 | .00864 | .00447 | .00239 |
| Pacific Northwest | 83,897 | 100 | 4,202 | 415.33 | 114.70 | 5.00 | 69.19 | 4.30 | .1573 | .00806 | .00417 | .00223 |
| Pacific Southwest | 111,899 | 100 | 6,225 | 461.05 | 106.40 | 6.34 | 73.44 | 4.54 | .1604 | .00953 | .00493 | .00269 |
| **ROAD** | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 898,265 | 46% | 3,699 | 168.44 | 33.09 | 1.39 | 36.80 | 2.30 | .0869 | .00381 | .00197 | .00120 |
| Eastern | 397,533 | 41 | 5,885 | 154.56 | 27.30 | 1.10 | 38.72 | 2.53 | .1848 | .00350 | .00181 | .00116 |
| Southern | 154,252 | 50 | 3,621 | 165.99 | 33.34 | 1.16 | 35.05 | 2.18 | .0902 | .00326 | .00169 | .00117 |
| Western | 346,480 | 51 | 2,612 | 189.15 | 39.99 | 2.04 | 35.57 | 2.13 | .0880 | .00463 | .00239 | .00127 |
| New England | 36,924 | 46 | 4,837 | 148.82 | 22.89 | 1.42 | 43.33 | 2.98 | .1067 | .00612 | .00316 | .00173 |
| Trunk Line | 172,478 | 40 | 7,996 | 136.59 | 28.26 | 1.05 | 40.73 | 2.92 | .0917 | .00357 | .00185 | .00123 |
| Central | 188,131 | 40 | 4,904 | 177.29 | 27.48 | 1.09 | 36.31 | 2.18 | .0765 | .00318 | .00164 | .00103 |
| Pocahontas | 47,830 | 51 | 6,176 | 162.02 | 28.48 | .69 | 36.72 | 2.81 | .0856 | .00225 | .00116 | .00096 |
| Southeastern | 106,422 | 50 | 3,054 | 167.84 | 36.11 | 1.69 | 34.35 | 1.98 | .0925 | .00409 | .00211 | .00130 |
| Western Trunk Line | 153,960 | 46 | 2,600 | 166.99 | 32.18 | 1.66 | 33.22 | 1.99 | .0851 | .00439 | .00227 | .00123 |
| Southwestern | 81,599 | 53 | 2,288 | 174.92 | 38.83 | 1.89 | 34.33 | 1.98 | .0904 | .00460 | .00238 | .00127 |
| Pacific Northwest | 48,971 | 59 | 2,470 | 244.17 | 67.43 | 2.93 | 40.68 | 2.53 | .0926 | .00474 | .00245 | .00131 |
| Pacific Southwest | 61,950 | 55 | 3,446 | 255.24 | 58.90 | 3.51 | 40.66 | 2.51 | .0888 | .00528 | .00273 | .00138 |
| **YARD** | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 1,067,714 | 54% | 4,397 | 200.20 | 39.33 | 1.65 | 43.75 | 2.73 | .1034 | .00453 | .00234 | .00143 |
| Eastern | 578,735 | 59 | 8,565 | 225.02 | 39.74 | 1.59 | 56.37 | 3.67 | .1236 | .00511 | .00264 | .00169 |
| Southern | 153,308 | 50 | 3,599 | 164.98 | 33.14 | 1.16 | 34.85 | 2.17 | .0827 | .00324 | .00167 | .00116 |
| Western | 335,671 | 49 | 2,530 | 183.25 | 38.75 | 1.97 | 34.47 | 2.06 | .0858 | .00448 | .00232 | .00124 |
| New England | 42,559 | 54 | 5,576 | 171.54 | 26.39 | 1.65 | 49.94 | 3.44 | .1230 | .00705 | .00365 | .00199 |
| Trunk Line | 258,888 | 60 | 12,002 | 205.03 | 42.42 | 1.57 | 61.15 | 4.39 | .1377 | .00537 | .00277 | .00185 |
| Central | 277,288 | 60 | 7,229 | 261.31 | 40.50 | 1.60 | 53.53 | 3.22 | .1128 | .00469 | .00243 | .00153 |
| Pocahontas | 45,599 | 49 | 5,887 | 154.47 | 27.14 | .66 | 35.01 | 2.68 | .0817 | .00214 | .00111 | .00091 |
| Southeastern | 107,709 | 50 | 3,090 | 169.86 | 36.55 | 1.71 | 34.77 | 2.01 | .0936 | .00414 | .00214 | .00132 |
| Western Trunk Line | 179,599 | 54 | 3,034 | 194.80 | 37.55 | 1.94 | 38.75 | 2.32 | .0994 | .00512 | .00265 | .00143 |
| Southwestern | 71,797 | 47 | 2,013 | 153.89 | 34.17 | 1.67 | 30.20 | 1.74 | .0796 | .00404 | .00209 | .00112 |
| Pacific Northwest | 34,386 | 41 | 1,732 | 171.16 | 47.27 | 2.07 | 28.51 | 1.77 | .0647 | .00332 | .00172 | .00092 |
| Pacific Southwest | 49,949 | 45 | 2,779 | 205.81 | 47.50 | 2.83 | 32.78 | 2.03 | .0716 | .00425 | .00220 | .00111 |



## SECTION 104. LOCATION COSTS

### Analysis 104.5 Rail Location Cost Percentages - 1932

| PURPOSE DISTRICTS AND TERRITORIES | ALL EXPENSE AND TAXES | OVERHEAD ADDITIONAL OVERHEAD | OVERHEAD MISCELLANEOUS STRAIGHT | MAINTENANCE WAY AND STRUCTURES TOTAL | MAINTENANCE WAY AND STRUCTURES ROADWAY | MAINTENANCE WAY AND STRUCTURES POWER STRUCTURE | MAINTENANCE WAY AND STRUCTURES WHARVES DOCKS | DIRECT EXPENSE MAINTENANCE EQUIPMENT 1000-POUND FREIGHT CAR MOTIVE POWER | DIRECT EXPENSE MAINTENANCE EQUIPMENT MISCELLANEOUS EQUIPMENT | TRANSPORTATION MOTIVE POWER | TRANSPORTATION SUPERINTENDENCE | TRANSPORTATION PLANT-AGE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL ROAD AND YARD | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| ROAD | | | | | | | | | | | | |
| United States | 45.7 | 47.3 | 47.3 | 45.3 | 77.6 | 82.3 | 65.3 | 11.8 | - | 31.4 | 71.8 | 7.8 | 10.2 | 44.3 | 55.7 | 8.9 | 10.3 |
| Eastern | 49.2 | 48.4 | 48.4 | 40.3 | 74.0 | 79.2 | 59.8 | 11.2 | - | 28.5 | 65.3 | 7.3 | 8.1 | 39.0 | 49.7 | 7.3 | 9.5 |
| Southern | 50.2 | 50.6 | 50.6 | 50.1 | 81.0 | 85.6 | 66.2 | 13.6 | - | 36.4 | 77.5 | 7.5 | 18.3 | 47.1 | 58.3 | 11.0 | 9.9 |
| Western | 50.8 | 52.9 | 52.9 | 58.3 | 85.9 | 84.3 | 71.7 | 16.1 | - | 33.4 | 79.0 | 8.7 | 12.0 | 51.1 | 63.3 | 10.6 | 11.6 |
| New England | 40.0 | 41.4 | 41.4 | 41.4 | 78.7 | 80.7 | 61.7 | 15.5 | - | 31.3 | 71.3 | 6.8 | 7.0 | 43.8 | 56.3 | 7.0 | 10.6 |
| Trunk Line | 40.4 | 42.2 | 42.2 | 42.2 | 78.2 | 77.4 | 57.6 | 13.7 | - | 29.5 | 65.9 | 6.6 | 6.9 | 38.2 | 49.8 | 16.2 | 9.9 |
| Central | 40.4 | 42.2 | 42.2 | 42.2 | 78.1 | 78.2 | 57.6 | 13.7 | - | 29.5 | 65.9 | 6.6 | 6.9 | 38.2 | 49.8 | 16.2 | 9.9 |
| Pocahontas | 51.2 | 50.9 | 50.9 | 51.3 | 81.5 | 87.4 | 68.6 | 13.4 | - | 39.2 | 77.2 | 8.0 | 9.2 | 39.0 | 48.5 | 8.4 | 8.9 |
| Southeastern | 49.7 | 50.4 | 50.4 | 49.5 | 80.7 | 84.8 | 64.4 | 13.6 | - | 35.1 | 77.6 | 8.4 | 11.6 | 47.6 | 58.4 | 9.2 | 8.4 |
| Western Trunk Line | 46.2 | 47.9 | 47.9 | 45.8 | 81.3 | 84.6 | 66.6 | 15.0 | - | 29.4 | 74.3 | 7.1 | 11.7 | 46.6 | 58.2 | 18.1 | 10.4 |
| Southwestern | 53.2 | 56.1 | 56.1 | 58.5 | 86.7 | 72.3 | 54.3 | 16.4 | - | 34.3 | 80.2 | 10.3 | 10.7 | 52.8 | 65.5 | 9.6 | 11.2 |
| Pacific Northwest | 58.8 | 60.7 | 60.7 | 58.4 | 84.9 | 76.0 | 58.5 | 18.5 | - | 41.4 | 86.5 | 9.2 | 16.3 | 59.3 | 71.5 | 12.0 | 12.0 |
| Pacific Southwest | 59.4 | 57.7 | 57.7 | 54.8 | 84.4 | 80.6 | 55.5 | 15.5 | - | 38.5 | 85.1 | 11.8 | 12.4 | 56.4 | 68.7 | 19.1 | 10.5 |
| YARD | | | | | | | | | | | | | | | | | |
| United States | 54.3 | 52.7 | 52.7 | 54.7 | 22.4 | 17.7 | 34.7 | 88.2 | 100 | 68.6 | 28.2 | 92.2 | 89.8 | 55.7 | 44.3 | 91.1 | 89.7 | 100 |
| Eastern | 59.3 | 57.6 | 57.6 | 59.7 | 26.0 | 20.8 | 40.2 | 85.0 | 100 | 71.5 | 34.7 | 92.7 | 91.9 | 61.0 | 50.3 | 92.7 | 90.5 | 100 |
| Southern | 49.9 | 49.4 | 49.4 | 50.0 | 19.0 | 11.4 | 33.8 | 86.4 | 100 | 67.5 | 24.5 | 91.5 | 88.7 | 52.9 | 44.7 | 89.0 | 90.1 | 100 |
| Western | 49.2 | 47.1 | 47.1 | 49.7 | 20.0 | 15.7 | 28.3 | 83.9 | 100 | 66.6 | 21.5 | 91.5 | 88.7 | 52.9 | 44.7 | 89.0 | 88.4 | 100 |
| New England | 53.5 | 51.2 | 51.2 | 54.1 | 24.5 | 20.4 | 32.3 | 84.5 | 100 | 68.7 | 28.7 | 93.2 | 93.0 | 56.2 | 43.7 | 89.4 | 89.7 | 100 |
| Trunk Line | 60.0 | 58.6 | 58.6 | 60.4 | 26.6 | 19.7 | 38.9 | 85.3 | 100 | 70.5 | 36.3 | 93.4 | 93.1 | 61.8 | 50.2 | 93.9 | 90.5 | 100 |
| Central | 58.6 | 57.8 | 57.8 | 60.0 | 25.9 | 21.8 | 42.4 | 86.8 | 100 | 72.6 | 34.1 | 96.0 | 90.8 | 61.0 | 51.5 | 91.7 | 91.1 | 100 |
| Pocahontas | 50.3 | 49.6 | 49.6 | 48.7 | 18.5 | 12.6 | 31.4 | 86.6 | 100 | 60.7 | 22.7 | 91.4 | 137.6* | 52.4 | 41.6 | 90.8 | 91.6 | 100 |
| Southeastern | 53.8 | 52.1 | 52.1 | 54.5 | 29.3 | 15.2 | 35.6 | 86.4 | 100 | 64.9 | 22.4 | 92.9 | 95.5 | 53.2 | 41.8 | 87.9 | 89.6 | 100 |
| Western Trunk Line | 46.8 | 45.9 | 45.9 | 47.5 | 16.2 | 13.1 | 27.4 | 85.0 | 100 | 70.6 | 25.7 | 93.0 | 98.3 | 53.5 | 41.8 | 92.0 | 89.8 | 100 |
| Southwestern | 41.2 | 39.3 | 39.3 | 41.7 | 17.0 | 15.1 | 21.7 | 81.6 | 100 | 65.7 | 19.0 | 94.7 | 89.3 | 47.2 | 34.5 | 90.5 | 89.1 | 100 |
| Pacific Northwest | 44.6 | 42.3 | 42.3 | 45.2 | 15.7 | 11.1 | 19.4 | 84.5 | 100 | 57.6 | 13.6 | 90.8 | 83.7 | 40.7 | 28.5 | 88.0 | 86.0 | 100 |
| Pacific Southwest | | | | | | | | | | 61.5 | 15.9 | 88.2 | 87.6 | 43.6 | 31.3 | 90.9 | 89.5 | 100 |

* Credit

SECTION 104. LOCATION COSTS

Analysis 104.6 Track Service Analysis of Yard Unit Costs - Districts and Territories - 1932

| DISTRICT OR TERRITORY | UNIT EXPENSE PER LOADED CAR — CLASSES OF TERMINAL SERVICE — SINGLE CARRIER — DIS-TRICT TOTAL | HOUSE | TEAM | IN-DUS-TRY | CON-NEC-TION DE-LIVERY | MULTIPLE CARRIER — HOUSE | TEAM | IN-DUS-TRY | INTER-MED-IATE | INTER-CHANGE | ROAD TRAIN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | $ 6.36 | $12.62 | $10.63 | $11.41 | $12.04 | $ 6.15 | $12.59 | $11.85 | $ 4.88 | $ 4.80 | $ 2.41 |
| EASTERN | 6.46 | 13.02 | 11.57 | 11.65 | 12.34 | 5.95 | 11.70 | 11.20 | 4.68 | 4.83 | 2.52 |
| SOUTHERN | 5.38 | 10.27 | 8.57 | 9.29 | 10.94 | 5.76 | 12.21 | 11.99 | 7.23 | 4.52 | 2.04 |
| WESTERN | 6.73 | 13.38 | 10.14 | 12.46 | 12.07 | 6.98 | 13.02 | 12.61 | 4.90 | 4.86 | 2.44 |
| NEW ENGLAND | 6.16 | 10.13 | 11.89 | 10.25 | 9.28 | 4.63 | 9.99 | 10.65 | - | 3.37 | 2.57 |
| TRUNK LINE | 6.65 | 14.12 | 12.03 | 11.72 | 11.93 | 9.02 | 13.74 | 13.52 | 6.83 | 4.97 | 2.76 |
| CENTRAL | 6.35 | 12.80 | 10.82 | 11.88 | 12.62 | 5.29 | 10.50 | 10.77 | 4.61 | 4.93 | 2.30 |
| POCAHONTAS | 4.42 | 11.14 | 6.04 | 7.62 | 10.94 | 7.19 | 9.46 | 10.79 | 7.75 | 3.82 | 1.76 |
| SOUTHEASTERN | 5.95 | 10.02 | 9.36 | 10.70 | 10.95 | 5.40 | 14.79 | 14.24 | 6.96 | 4.89 | 2.23 |
| WESTERN TRUNK LINE | 6.87 | 13.25 | 10.19 | 13.27 | 12.37 | 7.42 | 13.32 | 12.32 | 4.40 | 4.89 | 2.45 |
| SOUTHWESTERN | 5.45 | 10.49 | 9.33 | 10.23 | 9.43 | 4.37 | 8.12 | 10.64 | 4.93 | 4.29 | 1.93 |
| PACIFIC NORTHWEST | 8.65 | 16.18 | 12.76 | 13.78 | 14.53 | 7.35 | 11.11 | 15.47 | 10.59 | 7.54 | 3.57 |
| PACIFIC SOUTHWEST | 7.58 | 19.83 | 10.51 | 12.95 | 14.84 | 5.58 | 13.34 | 18.99 | 22.15 | 5.00 | 2.65 |



SECTION 104. LOCATION COSTS

Analysis 104.7 Track Service Analysis of Yard Unit Costs - Eastern District - 1932

| | UNIT EXPENSE PER LOADED CAR — CLASSES OF TERMINAL SERVICE — SINGLE CARRIER — DIS-TRICT TOTAL | HOUSE | TEAM | IN-DUS-TRY | CON-NEC-TION DE-LIVERY | MULTIPLE CARRIER — HOUSE | TEAM | IN-DUS-TRY | INTER-MED-IATE | ROAD HAUL INTER-CHANGE | ROAD TRAIN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | $ 6.36 | $12.62 | $10.63 | $11.41 | $12.04 | $ 6.15 | $12.59 | $11.85 | $ 4.88 | $ 4.80 | $ 2.41 |
| EASTERN DISTRICT | 6.46 | 13.02 | 11.57 | 11.65 | 12.34 | 5.95 | 11.70 | 11.20 | 4.68 | 4.83 | 2.53 |
| NEW ENGLAND | 6.16 | 10.13 | 11.89 | 10.25 | 9.28 | 4.63 | 9.99 | 10.65 | - | 3.37 | 2.57 |
| Boston | 10.39 | 14.06 | 10.53 | 10.35 | 9.65 | 5.78 | 11.27 | 13.15 | - | 4.84 | 4.48 |
| Bridgeport | 6.33 | 9.22 | 11.78 | 11.04 | - | - | - | - | - | - | 3.00 |
| Fall River | 5.74 | 7.47 | 8.21 | 8.58 | - | - | - | - | - | - | 1.53 |
| Hartford | 7.56 | 9.65 | 10.89 | 9.66 | - | - | - | - | - | - | 2.37 |
| Lowell | 4.25 | 15.19 | 8.45 | 11.58 | 13.99 | - | - | 11.80 | - | 3.65 | 2.60 |
| Lynn | 7.84 | 7.85 | 8.44 | 7.63 | - | - | - | - | - | - | - |
| New Bedford | 8.98 | 14.03 | 8.32 | 8.83 | - | - | - | - | - | - | 1.51 |
| New Haven | 5.59 | 7.31 | 13.54 | 15.11 | - | - | - | - | - | - | 3.00 |
| Providence | 8.30 | 7.77 | 13.97 | 10.25 | 7.71 | - | - | - | - | 16.46 | 2.43 |
| Springfield | 3.98 | 6.59 | 13.41 | 9.32 | 8.90 | 4.88 | 10.31 | 9.18 | - | 3.66 | 1.49 |
| Worcester | 4.27 | 5.95 | 6.88 | 9.82 | 14.01 | 3.74 | 6.93 | 9.97 | - | 2.56 | 2.25 |
| Majors | 4.63 | 8.01 | 9.74 | 10.48 | 7.28 | 4.80 | 6.23 | 7.81 | - | 3.36 | 2.68 |
| Minors | 8.69 | 15.12 | 13.41 | 9.81 | 7.01 | 4.32 | 16.39 | 7.85 | - | 3.75 | 1.03 |
| TRUNK LINE | $ 6.65 | $14.12 | $12.03 | $11.72 | $11.93 | $ 9.02 | $13.74 | $13.52 | $ 6.83 | $ 4.97 | $ 2.76 |
| Albany | 14.81 | 19.00 | 13.14 | 16.38 | 13.07 | - | - | 17.53 | - | 5.95 | - |
| Baltimore | 9.54 | 15.30 | 11.28 | 10.81 | 9.88 | 6.88 | 18.07 | 11.42 | - | 4.58 | 2.95 |
| Buffalo | 7.10 | 14.65 | 16.21 | 12.71 | 13.84 | 8.16 | 11.70 | 15.29 | 5.40 | 5.27 | 3.37 |
| Erie | 9.58 | 12.03 | 8.10 | 12.71 | 15.22 | 5.52 | 10.85 | 15.29 | 4.57 | 8.09 | 3.19 |
| New York | 14.65 | 19.87 | 15.37 | 17.63 | 16.15 | 21.67 | 14.42 | 13.34 | 6.14 | 9.87 | 12.83 |
| Paterson | 10.21 | 16.37 | 11.09 | 10.48 | - | - | - | - | - | - | 2.57 |
| Philadelphia | 10.01 | 16.01 | 14.66 | 14.10 | 7.75 | - | 14.69 | 14.21 | 11.81 | 5.48 | 3.96 |
| Pittsburgh | 8.26 | 11.82 | 13.51 | 10.53 | 10.85 | - | 15.62 | 12.49 | - | 5.92 | 3.61 |
| Reading | 9.75 | 11.88 | 15.10 | 15.06 | - | - | - | - | - | 6.58 | 4.24 |
| Rochester | 12.20 | 14.13 | 10.08 | 12.20 | 18.24 | 6.86 | 14.10 | 13.91 | - | 6.14 | - |
| Scranton | 5.68 | 10.92 | 20.25 | 9.27 | 21.02 | - | 9.09 | 28.36 | - | 5.33 | 1.60 |
| Syracuse | 4.66 | 14.51 | 11.91 | 11.32 | 9.25 | - | - | 12.70 | - | 5.66 | 2.96 |
| Trenton | 9.12 | 9.10 | 13.06 | 15.76 | 9.38 | - | 12.09 | - | - | 9.19 | 4.29 |
| Utica | 5.89 | 7.90 | 9.93 | 11.74 | 7.88 | 4.86 | - | 13.14 | 3.25 | 3.69 | 2.59 |
| Washington | 12.11 | 11.49 | 12.64 | 12.40 | - | 7.56 | 17.68 | 17.30 | - | 14.62 | 2.89 |
| Wilmington | 4.69 | 10.93 | 16.37 | 14.54 | 16.36 | - | 9.73 | 11.21 | - | 5.66 | 3.25 |
| Majors. | 4.56 | 10.84 | 12.06 | 12.84 | 10.22 | 6.74 | 8.45 | 12.65 | 6.59 | 4.26 | 2.03 |
| Minors | 5.99 | 12.75 | 9.10 | 9.17 | 11.23 | 4.20 | 8.65 | 8.47 | 6.48 | 3.69 | 2.55 |
| CENTRAL | $ 6.35 | $12.80 | $10.82 | $11.88 | $12.62 | $ 5.29 | $10.50 | $10.77 | $ 4.61 | $ 4.93 | $ 2.30 |
| Akron | 6.36 | 10.17 | 7.68 | 10.14 | 7.53 | - | 5.61 | 9.70 | - | 3.32 | 2.02 |
| Canton | 6.09 | 11.07 | 13.78 | 15.12 | 12.16 | 5.07 | - | 15.50 | - | 4.72 | 4.01 |
| Chicago | 9.46 | 14.97 | 14.56 | 12.51 | 14.89 | 5.43 | 11.29 | 8.91 | 3.72 | 7.69 | 4.11 |
| Cincinnati | 6.87 | 11.34 | 13.61 | 12.96 | 11.26 | 5.86 | 14.38 | 12.25 | 9.18 | 5.02 | 2.65 |
| Cleveland | 8.80 | 13.30 | 14.35 | 16.37 | 14.41 | 5.00 | 11.15 | 15.97 | 10.51 | 7.47 | 2.62 |
| Columbus | 4.32 | 8.17 | 11.20 | 11.41 | 11.94 | 5.14 | - | 10.80 | - | 4.31 | 2.45 |
| Dayton | 7.42 | 10.81 | 13.48 | 11.07 | 9.01 | 5.05 | - | 12.47 | - | 4.25 | 2.35 |
| Detroit | 9.19 | 13.28 | 10.79 | 13.57 | 10.72 | 4.08 | 10.46 | 12.68 | 5.16 | 7.08 | 4.05 |
| Evansville | 7.04 | 13.47 | 14.01 | 13.67 | 12.88 | 4.94 | 8.87 | 11.97 | 4.85 | 4.11 | 2.32 |
| Flint | 12.08 | 15.39 | 12.89 | 13.16 | 8.12 | - | - | 10.60 | - | - | 4.02 |
| Fort Wayne | 6.88 | 10.57 | 15.80 | 16.23 | 13.29 | 4.83 | - | 11.90 | 6.45 | 8.38 | 3.19 |
| Grand Rapids | 9.46 | 12.93 | 10.38 | 17.19 | 13.03 | - | 11.55 | 15.51 | 14.44 | 6.37 | 3.26 |
| Indianapolis | 7.38 | 10.10 | 14.91 | 14.65 | 11.25 | 5.60 | - | 14.25 | - | 4.48 | 2.81 |
| Milwaukee | 10.65 | 12.42 | 15.32 | 14.24 | 13.10 | 7.32 | 14.66 | 13.54 | 7.29 | 10.01 | 2.82 |
| Peoria | 5.32 | 8.86 | 7.45 | 18.91 | 6.43 | 4.48 | 7.34 | 7.84 | 4.13 | 2.54 | 3.75 |
| South Bend | 7.55 | 10.66 | 8.44 | 14.58 | 12.99 | - | - | 13.68 | 3.42 | 3.26 | 2.50 |
| Toledo | 6.37 | 9.74 | 11.92 | 11.33 | 10.36 | 4.93 | 9.79 | 12.87 | 7.85 | 4.36 | 4.50 |
| Youngstown | 7.52 | 11.56 | 12.84 | 20.94 | 16.00 | - | - | 17.94 | 24.22 | 4.13 | 3.18 |
| Majors | 4.17 | 8.65 | 10.30 | 11.24 | 9.85 | 3.97 | 10.32 | 11.02 | 22.11 | 3.84 | 2.07 |
| Minors | 7.63 | 23.09 | 9.57 | 10.45 | 10.34 | 5.08 | 7.65 | 13.11 | 4.65 | 3.99 | 1.81 |

SECTION 104. LOCATION COSTS

Analysis 104.8 Track Service Analysis of Yard Unit Costs - Southern and Western Districts 1932

| | UNIT EXPENSE PER LOADED CAR CLASSES OF TERMINAL SERVICE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SINGLE CARRIER | | | | MULTIPLE CARRIER | | | | | |
| | DISTRICT TOTAL | HOUSE | TEAM | INDUSTRY | CONNECTION DELIVERY | HOUSE | TEAM | INDUSTRY | INTERMEDIATE | ROAD HAUL INTERCHANGE | ROAD TRAIN |
| UNITED STATES | $6.36 | $12.62 | $10.63 | $11.41 | $12.04 | $6.15 | $12.59 | $11.85 | $4.88 | $4.80 | $2.41 |
| SOUTHERN DISTRICT | 5.38 | 10.27 | 8.57 | 9.29 | 10.94 | 5.76 | 12.21 | 11.99 | 7.23 | 4.52 | 2.04 |
| WESTERN DISTRICT | 6.73 | 13.38 | 10.14 | 12.46 | 12.07 | 6.98 | 13.02 | 12.61 | 4.90 | 4.86 | 2.44 |
| POCAHONTAS | 4.42 | 11.14 | 6.04 | 7.62 | 10.94 | 7.19 | 9.46 | 10.79 | 7.75 | 3.82 | 1.76 |
| Norfolk | 11.39 | 14.75 | 10.49 | 12.67 | 12.15 | 12.36 | 11.16 | 13.04 | 17.66 | 7.02 | 7.58 |
| Richmond | 5.28 | 10.26 | 7.62 | 19.98 | 10.91 | 9.24 | 8.90 | 9.75 | 8.10 | 2.88 | 1.09 |
| Majors | 3.19 | 8.85 | 9.58 | 8.54 | 10.75 | 4.45 | 12.19 | 11.31 | 7.36 | 4.48 | 1.64 |
| Minors | 5.21 | 16.27 | 4.74 | 5.96 | 4.25 | 3.41 | 4.81 | 8.08 | 1.65 | 1.39 | 2.63 |
| SOUTHEASTERN | 5.95 | 10.02 | 9.36 | 10.70 | 10.95 | 5.40 | 14.79 | 14.24 | 6.96 | 4.89 | 2.23 |
| Atlanta | 6.24 | 8.54 | 10.04 | 10.26 | 10.79 | 3.37 | 11.27 | 11.94 | 9.00 | 5.07 | 2.95 |
| Birmingham | 6.18 | 8.69 | 16.18 | 12.67 | 10.28 | 4.41 | - | 11.15 | - | 4.67 | 2.98 |
| Chattanooga | 5.36 | 8.69 | 18.99 | 13.42 | 13.93 | - | - | 11.83 | 33.55 | 4.47 | 1.79 |
| Jacksonville | 8.12 | 7.19 | 13.92 | 12.55 | 9.48 | 5.97 | - | 12.07 | 10.40 | 7.84 | 2.68 |
| Knoxville | 7.42 | 13.07 | 21.08 | 17.81 | 9.48 | - | - | 15.32 | 10.45 | 6.34 | 2.84 |
| Louisville | 9.40 | 13.87 | 14.05 | 17.36 | 11.66 | 9.49 | - | 18.04 | 8.07 | 5.95 | 2.36 |
| Memphis | 7.21 | 10.30 | 10.24 | 11.71 | 9.97 | - | 11.85 | 11.72 | 3.91 | 4.49 | 2.06 |
| Miami | 15.39 | 21.75 | 19.73 | 23.41 | 14.83 | - | 14.07 | 17.94 | - | 8.80 | 3.69 |
| Nashville | 8.67 | 13.09 | 14.01 | 15.68 | 10.74 | - | - | 14.15 | 16.27 | 5.62 | 2.49 |
| New Orleans | 13.54 | 17.50 | 17.88 | 19.08 | 10.76 | 10.90 | 18.51 | 14.49 | 5.07 | 9.76 | 9.40 |
| Tampa | 12.25 | 13.45 | 9.79 | 23.58 | 6.95 | - | - | 22.42 | - | 4.87 | 3.08 |
| Majors | 4.76 | 8.32 | 10.58 | 13.73 | 12.67 | 5.01 | 15.80 | 12.49 | 6.45 | 5.53 | 2.19 |
| Minors | 6.30 | 11.67 | 8.45 | 7.47 | 6.40 | 2.93 | 7.66 | 6.61 | 5.08 | 3.29 | 2.06 |
| WESTERN TRUNK LINE | 6.87 | 13.25 | 10.39 | 13.27 | 12.37 | 7.42 | 13.32 | 12.32 | 4.40 | 4.89 | 2.45 |
| Denver | 10.17 | 13.30 | 13.53 | 12.85 | 13.64 | 6.33 | - | 14.97 | 8.24 | 7.14 | 4.78 |
| Des Moines | 9.29 | 13.41 | 28.89 | 23.19 | 23.27 | 7.13 | - | 20.07 | 5.36 | 6.01 | 3.38 |
| Duluth | 18.12 | 15.39 | 20.99 | 23.10 | 19.20 | 8.36 | 9.81 | 17.15 | 8.05 | 10.10 | 4.42 |
| Kansas City | 7.19 | 12.07 | 13.11 | 8.05 | 14.39 | 5.93 | 10.14 | 8.78 | 6.11 | 4.70 | 3.11 |
| Minneapolis | 10.82 | 14.10 | 14.21 | 15.73 | 18.04 | 7.93 | 13.58 | 15.25 | 6.53 | 5.75 | 3.38 |
| Omaha | 8.55 | 7.31 | 16.74 | 19.31 | 14.82 | 5.84 | 21.38 | 18.27 | 5.87 | 4.74 | 20.13 |
| St. Paul | 6.82 | 9.30 | 8.50 | 12.24 | 7.04 | 6.41 | 9.93 | 13.53 | 5.45 | 6.06 | 3.00 |
| St. Louis | 6.68 | 11.88 | 10.24 | 11.77 | 7.73 | 6.39 | 14.79 | 11.25 | 4.05 | 3.62 | 4.90 |
| Wichita | 8.81 | 8.81 | 9.41 | 13.00 | 8.29 | - | - | 11.42 | 4.28 | 5.21 | 4.20 |
| Davenport | 5.65 | 10.49 | 13.39 | 14.97 | 13.83 | 6.55 | 12.61 | 16.00 | 5.79 | 4.75 | 3.17 |
| Majors | 4.62 | 10.28 | 13.12 | 11.98 | 12.82 | 11.18 | 9.81 | 13.10 | 4.96 | 6.91 | 2.17 |
| Minors | 9.77 | 19.58 | 8.88 | 13.43 | 8.02 | 8.27 | 6.91 | 12.19 | 5.62 | 3.73 | 2.51 |
| SOUTHWESTERN | 5.45 | 10.49 | 9.33 | 10.23 | 9.43 | 4.37 | 8.12 | 10.64 | 4.93 | 4.29 | 1.93 |
| Dallas | 8.21 | 8.17 | 9.73 | 9.32 | 8.20 | - | - | 11.35 | 8.13 | 5.54 | 2.52 |
| El Paso | 2.96 | 5.35 | 3.56 | 8.15 | 4.60 | 4.19 | - | 7.44 | 1.88 | 3.05 | 1.87 |
| Fort Worth | 6.28 | 8.67 | 10.36 | 10.93 | 9.12 | - | 11.24 | 10.84 | 3.31 | 4.54 | 2.05 |
| Houston | 8.60 | 10.36 | 14.21 | 12.89 | 12.75 | - | - | 14.84 | 1.74 | 5.54 | 2.43 |
| Little Rock | 5.06 | 9.43 | 8.30 | 11.86 | 9.05 | - | - | 10.96 | - | 4.19 | 3.07 |
| Oklahoma City | 8.51 | 9.08 | 15.68 | 11.03 | 9.95 | - | - | 10.42 | 2.95 | 4.72 | 2.14 |
| San Antonio | 6.83 | 6.87 | 16.70 | 14.91 | 10.12 | 5.17 | - | 13.36 | - | 5.84 | 4.08 |
| Tulsa | 4.90 | 7.32 | 8.14 | 8.71 | 7.40 | - | - | 7.74 | 4.40 | 4.24 | 1.94 |
| Majors | 4.10 | 8.45 | 11.61 | 11.57 | 9.65 | 4.21 | 12.00 | 10.82 | 3.22 | 4.12 | 1.80 |
| Minors | 7.48 | 14.48 | 8.79 | 9.01 | 9.95 | 4.57 | 6.85 | 8.36 | 9.68 | 4.43 | 2.13 |
| PACIFIC NORTHWEST | 8.65 | 16.18 | 12.76 | 13.78 | 14.53 | 7.35 | 11.11 | 15.47 | 10.59 | 7.54 | 3.57 |
| Portland | 12.46 | 14.03 | 16.03 | 16.95 | 12.68 | - | - | 18.46 | 10.75 | 10.26 | 3.85 |
| Seattle | 14.59 | 20.24 | 16.34 | 15.28 | 15.54 | 9.99 | - | 11.96 | - | 10.52 | 10.88 |
| Spokane | 8.01 | 8.98 | 13.98 | 11.33 | 12.16 | 4.12 | - | 13.54 | 13.63 | 6.39 | 5.05 |
| Tacoma | 11.00 | 10.13 | 13.92 | 13.25 | 14.69 | - | - | 15.13 | 13.74 | 6.22 | 5.58 |
| Majors | 6.04 | 13.08 | 14.23 | 14.56 | 17.94 | 8.18 | 14.15 | 17.65 | 6.10 | 6.24 | 3.27 |
| Minors | 12.27 | 24.41 | 12.17 | 12.82 | 16.30 | 6.95 | 8.84 | 16.16 | 7.84 | 7.97 | 3.58 |
| PACIFIC SOUTHWEST | 7.58 | 19.83 | 10.51 | 12.95 | 14.84 | 5.58 | 13.34 | 18.99 | 22.15 | 5.00 | 2.65 |
| Long Beach | 14.54 | 24.77 | 3.05 | 8.16 | 15.08 | - | - | 8.26 | - | - | - |
| Los Angeles | 15.05 | 19.23 | 21.60 | 17.84 | 19.22 | - | - | 17.99 | 37.05 | 6.91 | 9.21 |
| Salt Lake City | 7.25 | 11.59 | 10.40 | 14.46 | 11.70 | - | - | 16.07 | 28.35 | 6.26 | 3.51 |
| Oakland | 12.60 | 23.26 | 17.04 | 19.46 | 11.77 | 8.27 | 36.53 | 19.50 | 14.18 | 11.52 | 3.85 |
| San Diego | 13.09 | 27.09 | 14.04 | 16.01 | 10.80 | - | 14.64 | 19.34 | - | 7.06 | 6.24 |
| San Francisco | 15.93 | 22.81 | 14.13 | 21.36 | 14.56 | - | 11.39 | 19.74 | 12.99 | 7.83 | 1.93 |
| Majors | 5.10 | 16.61 | 17.28 | 15.65 | 17.66 | 2.41 | 17.44 | 23.24 | 6.66 | 4.78 | 2.37 |
| Minors | 8.32 | 23.03 | 7.03 | 9.46 | 11.93 | 6.16 | - | 6.91 | 2.91 | 4.28 | 2.15 |



SECTION 105. UTILIZATION

Analysis 105.1 Capacity of Rail Terminals in Eastern District

| TERMINAL DISTRICT | INDUSTRIES* ON TRACK | NUMBER OF YARDS | YARD TRACK MILES | YARD CAR CAPACITY | YARD ENGINE HOURS | SHOP CAPACITY ENGINE HOUSE | SHOP CAPACITY ENGINE REPAIR | SHOP CAPACITY CAR REPAIR |
|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 197,845 | 4,753 | 88,395.41 | 8,036,584 | 36,142,335 | 29,206 | 791,812 | 8,322,057 |
| EASTERN DISTRICT | 74,741 | 2,621 | 38,723.85 | 3,578,541 | 20,073,956 | 13,444 | 381,457 | 3,563,059 |
| NEW ENGLAND | 7,621 | 249 | 2,633.45 | 243,447 | 1,136,764 | 1,420 | 16,601 | 185,941 |
| Boston | 785 | 27 | 270.42 | 25,892 | 233,395 | 218 | 12 | 52,740 |
| Bridgeport | 102 | 2 | 27.97 | 2,976 | 21,621 | 17 | - | - |
| Fall River | 25 | 4 | 8.02 | 770 | 5,834 | 10 | - | - |
| Hartford | 266 | 4 | 60.64 | 6,555 | 24,388 | 36 | - | 4,368 |
| Lowell | 157 | 2 | 36.85 | 2,777 | 17,851 | 12 | - | 2,136 |
| Lynn | 37 | 1 | 7.77 | 603 | 2,014 | 4 | - | - |
| New Bedford | 51 | 3 | 12.60 | 1,045 | 4,450 | 15 | - | - |
| New Haven | 187 | 16 | 194.34 | 14,051 | 81,704 | 73 | - | 50,400 |
| Providence | 227 | 20 | 86.23 | 8,859 | 73,748 | 27 | - | 12,456 |
| Springfield | 191 | 5 | 74.89 | 6,855 | 60,734 | 74 | 147 | 11,748 |
| Worcester | 163 | 11 | 56.53 | 6,587 | 50,740 | 29 | - | 4,596 |
| Majors | 1,869 | 88 | 752.78 | 66,727 | 346,020 | 662 | 16,203 | 45,867 |
| Minors | 3,561 | 66 | 1,044.41 | 99,750 | 214,265 | 243 | 239 | 1,630 |
| TRUNK LINE | 24,372 | 1,370 | 14,602.65 | 1,408,210 | 8,864,895 | 3,861 | 299,881 | 1,242,134 |
| Albany | 193 | 7 | 120.81 | 12,935 | 66,313 | 70 | 1,125 | 1,225 |
| Baltimore | 506 | 33 | 351.85 | 33,348 | 267,204 | 94 | 316 | 31,273 |
| Buffalo | 658 | 58 | 939.82 | 82,184 | 733,144 | 211 | 28,812 | 71,298 |
| Erie | 229 | 23 | 154.80 | 17,842 | 59,056 | 31 | - | 12,045 |
| New York | 1,536 | 170 | 1,497.94 | 123,928 | 1,214,737 | 395 | 13,145 | 118,323 |
| Paterson | 133 | 1 | 29.40 | 2,420 | 10,991 | - | - | - |
| Philadelphia | 1,319 | 70 | 577.04 | 63,710 | 671,660 | 114 | 97,967 | 113,349 |
| Pittsburgh | 654 | 79 | 605.01 | 65,272 | 420,263 | 118 | 8,180 | 21,855 |
| Reading | 169 | 12 | 83.10 | 4,989 | 68,974 | 29 | 1,156 | 17,490 |
| Rochester | 532 | 4 | 115.50 | 9,816 | 92,136 | 53 | 5,715 | 9,403 |
| Scranton | 220 | 8 | 146.47 | 13,474 | 143,940 | 111 | 350 | 8,262 |
| Syracuse | 237 | 13 | 115.35 | 18,671 | 185,356 | 103 | 17,854 | 45,489 |
| Trenton | 136 | 22 | 43.70 | 4,607 | 64,496 | - | 2,136 | 3,360 |
| Utica | 101 | 6 | 99.23 | 7,970 | 43,117 | 53 | - | - |
| Washington | 124 | 10 | 49.88 | 4,994 | 64,122 | - | - | - |
| Wilmington | 128 | 16 | 88.51 | 8,893 | 105,674 | 43 | 1,044 | 15,300 |
| Majors | 5,830 | 524 | 5,587.41 | 513,555 | 2,792,560 | 2,130 | 116,308 | 754,896 |
| Minors | 11,667 | 314 | 3,996.83 | 419,603 | 1,861,152 | 306 | 5,773 | 18,564 |
| CENTRAL | 42,748 | 1,002 | 21,487.75 | 1,926,884 | 10,072,297 | 7,163 | 64,975 | 2,134,984 |
| Akron | 297 | 4 | 108.61 | 11,648 | 76,056 | 22 | 1,530 | 11,765 |
| Canton | 208 | 16 | 123.00 | 12,500 | 65,622 | 40 | 6,122 | 4,284 |
| Chicago | 4,664 | 153 | 3,441.77 | 298,235 | 2,412,430 | 1,036 | 1,100 | 622,708 |
| Cincinnati | 753 | 40 | 490.06 | 46,305 | 558,157 | 1,597 | 195 | 136,297 |
| Cleveland | 1,357 | 25 | 658.22 | 71,213 | 472,112 | 160 | 5,068 | 111,158 |
| Columbus | 507 | 25 | 439.02 | 36,035 | 256,073 | 181 | 498 | 74,875 |
| Dayton | 319 | 8 | 62.27 | 5,430 | 48,669 | 20 | - | 655 |
| Detroit | 2,195 | 57 | 916.73 | 91,901 | 501,117 | 190 | 4,970 | 27,902 |
| Evansville | 220 | 6 | 89.72 | 8,258 | 68,388 | 59 | 127 | 41,490 |
| Flint | 128 | 2 | 92.25 | 10,116 | 31,897 | 10 | - | - |
| Fort Wayne | 177 | 7 | 111.21 | 8,109 | 63,267 | 77 | 706 | 8,421 |
| Grand Rapids | 517 | 8 | 158.68 | 15,277 | 61,588 | 73 | 3,525 | 3,264 |
| Indianapolis | 626 | 19 | 290.29 | 23,676 | 229,996 | 150 | 5,258 | 50,129 |
| Milwaukee | 742 | 13 | 294.35 | 29,059 | 228,032 | 115 | 143 | 47,124 |
| Peoria | 260 | 8 | 205.18 | 19,030 | 104,575 | 78 | 25 | 30,850 |
| South Bend | 104 | 5 | 58.99 | 4,570 | 20,028 | 15 | - | 6,951 |
| Toledo | 402 | 19 | 846.95 | 62,257 | 472,978 | 164 | 3,274 | 140,488 |
| Youngstown | 200 | 16 | 170.76 | 24,953 | 137,208 | 26 | 1,296 | 1,790 |
| Majors | 9,925 | 402 | 6,611.27 | 575,501 | 2,684,135 | 3,751 | 30,177 | 743,946 |
| Minors | 19,147 | 169 | 6,510.43 | 572,811 | 1,579,969 | 399 | 961 | 67,887 |

* "Industries" includes duplications wherever one industry is served by more than one rail carrier.

SECTION 105. UTILIZATION

Analysis 105.2 Capacity of Rail Terminals - Southern and Western Districts

| TERMINAL DISTRICT | INDUSTRIES* ON TRACK | NUMBER OF YARDS | YARD TRACK MILES | YARD CAR CAPACITY | YARD ENGINE HOURS | SHOP CAPACITY ENGINE HOUSE | SHOP CAPACITY ENGINE REPAIR | SHOP CAPACITY CAR REPAIR |
|---|---|---|---|---|---|---|---|---|
| SOUTHERN DISTRICT | 29,475 | 716 | 13,757.95 | 1,334,303 | 5,173,926 | 3,071 | 178,026 | 1,599,954 |
| WESTERN DISTRICT | 93,689 | 1,386 | 35,913.61 | 3,123,740 | 10,894,153 | 12,691 | 238,329 | 3,159,044 |
| POCAHONTAS | 4,944 | 153 | 3,481.99 | 321,933 | 1,111,812 | 787 | 40,425 | 402,982 |
| Norfolk | 355 | 19 | 122.75 | 39,111 | 157,833 | 60 | 3,239 | 52,081 |
| Richmond | 118 | 17 | 185.44 | 15,208 | 110,701 | 148 | 293 | 40,182 |
| Majors | 1,758 | 98 | 1,430.69 | 134,193 | 767,781 | 564 | 36,885 | 306,395 |
| Minors | 2,413 | 19 | 1,443.11 | 135,818 | 375,497 | 15 | 8 | 3,976 |
| SOUTHEASTERN | 24,531 | 593 | 10,275.96 | 1,009,370 | 3,762,114 | 2,284 | 137,601 | 1,197,022 |
| Atlanta | 735 | 8 | 293.21 | 21,147 | 177,579 | 120 | 21,836 | 46,173 |
| Birmingham | 494 | 9 | 295.33 | 27,852 | 167,121 | 123 | 673 | 76,459 |
| Chattanooga | 404 | 6 | 134.83 | 11,823 | 76,740 | 45 | 8,574 | 39,368 |
| Jacksonville | 401 | 20 | 207.59 | 17,262 | 82,489 | 78 | 6,472 | 27,360 |
| Knoxville | 378 | 5 | 67.88 | 8,015 | 67,256 | 76 | 9,206 | 21,219 |
| Louisville | 566 | 15 | 257.39 | 21,895 | 260,874 | 94 | 1,621 | 60,664 |
| Memphis | 925 | 19 | 379.19 | 38,669 | 215,996 | 101 | 1,947 | 50,826 |
| Miami | 84 | 3 | 60.27 | 4,125 | 12,169 | 27 | 12 | 9,180 |
| Nashville | 764 | 11 | 166.78 | 14,879 | 139,388 | 87 | 297 | 45,142 |
| New Orleans | 359 | 11 | 372.25 | 32,592 | 183,735 | 99 | 2,330 | 29,772 |
| Tampa | 259 | 5 | 81.65 | 7,901 | 29,785 | 17 | 135 | 144 |
| Majors | 6,896 | 302 | 3,301.00 | 321,511 | 1,687,182 | 1,311 | 78,594 | 776,766 |
| Minors | 12,266 | 179 | 4,660.28 | 478,399 | 631,202 | 106 | 2,901 | 13,649 |
| WESTERN TRUNK LINE | 48,740 | 706 | 16,158.94 | 1,417,408 | 6,025,151 | 6,956 | 75,901 | 1,582,173 |
| Denver | 901 | 9 | 258.39 | 23,781 | 156,094 | 141 | 349 | 76,730 |
| Des Moines | 326 | 9 | 116.16 | 8,140 | 85,803 | 134 | 22 | 25,794 |
| Duluth | 425 | 39 | 410.83 | 35,572 | 171,533 | 151 | 188 | 35,401 |
| Kansas City | 1,136 | 28 | 806.08 | 75,324 | 726,805 | 282 | 5,491 | 233,787 |
| Minneapolis | 1,039 | 38 | 526.77 | 42,658 | 318,237 | 222 | 310 | 71,150 |
| Omaha | 1,007 | 20 | 449.04 | 34,740 | 286,634 | 169 | 21 | 26,757 |
| St. Paul | 733 | 25 | 358.61 | 32,214 | 236,790 | 202 | 401 | 43,550 |
| St. Louis | 1,315 | 49 | 1,154.48 | 97,165 | 912,819 | 361 | 2,065 | 180,193 |
| Wichita | 300 | 9 | 132.98 | 13,738 | 47,398 | 46 | 6,325 | 7,005 |
| Davenport | 451 | 9 | 222.04 | 18,185 | 102,795 | 85 | 178 | 27,370 |
| Majors | 7,981 | 318 | 4,666.81 | 377,892 | 1,989,238 | 4,154 | 60,895 | 775,682 |
| Minors | 33,128 | 153 | 7,056.75 | 657,999 | 991,305 | 1,009 | 882 | 78,747 |
| SOUTHWESTERN | 21,682 | 350 | 9,738.84 | 930,879 | 2,270,296 | 2,512 | 113,005 | 701,776 |
| Dallas | 641 | 7 | 155.03 | 12,535 | 96,335 | 24 | 6,318 | 8,152 |
| El Paso | 162 | 4 | 82.77 | 7,034 | 57,132 | 76 | 2,043 | 11,232 |
| Fort Worth | 259 | 11 | 216.32 | 18,999 | 123,114 | 107 | 6,211 | 69,014 |
| Houston | 677 | 9 | 343.97 | 29,722 | 217,127 | 92 | 3,716 | 49,083 |
| Little Rock | 267 | 6 | 152.21 | 13,860 | 54,014 | 83 | 291 | 18,330 |
| Oklahoma City | 378 | 5 | 81.69 | 7,221 | 46,190 | 30 | 6,005 | 17,586 |
| San Antonio | 328 | 4 | 124.19 | 12,175 | 43,364 | 62 | 3,355 | 5,787 |
| Tulsa | 266 | 3 | 95.98 | 9,220 | 58,227 | 25 | 2,544 | 15,168 |
| Majors | 4,785 | 182 | 2,850.06 | 273,586 | 1,015,225 | 1,651 | 81,269 | 482,693 |
| Minors | 13,919 | 119 | 5,636.62 | 546,827 | 561,268 | 362 | 1,223 | 214,491 |
| PACIFIC NORTHWEST | 11,759 | 143 | 4,089.99 | 348,831 | 1,115,753 | 1,574 | 1,147 | 366,565 |
| Portland | 416 | 8 | 247.90 | 18,513 | 169,054 | 97 | 255 | 56,661 |
| Seattle | 1,122 | 7 | 193.26 | 13,939 | 83,832 | 59 | 11 | 25,162 |
| Spokane | 377 | 11 | 154.65 | 11,718 | 68,710 | 90 | 166 | 42,378 |
| Tacoma | 342 | 4 | 357.50 | 9,315 | 38,692 | 42 | 147 | 22,599 |
| Majors | 2,437 | 80 | 1,321.29 | 108,333 | 518,886 | 1,037 | 568 | 211,891 |
| Minors | 7,065 | 33 | 2,011.39 | 187,213 | 266,579 | 249 | - | 7,874 |
| PACIFIC SOUTHWEST | 11,448 | 187 | 5,985.84 | 426,622 | 1,458,953 | 1,618 | 42,273 | 508,530 |
| Long Beach | 20 | - | 5.79 | 330 | 2,099 | - | - | - |
| Los Angeles | 1,452 | 8 | 338.61 | 24,803 | 187,634 | 128 | 196 | 151,002 |
| Salt Lake City | 298 | 8 | 140.48 | 15,279 | 96,026 | 50 | 108 | 16,106 |
| Oakland | 448 | 4 | 151.36 | 9,495 | 137,269 | 40 | 2 | 9,320 |
| San Diego | 119 | 2 | 27.33 | 2,290 | 11,492 | 10 | 25 | 11,400 |
| San Francisco | 853 | 8 | 249.01 | 24,949 | 128,204 | 62 | 243 | 43,160 |
| Majors | 1,804 | 71 | 1,449.13 | 117,971 | 607,393 | 1,028 | 36,459 | 252,236 |
| Minors | 6,454 | 86 | 3,564.13 | 231,505 | 282,836 | 331 | 5,240 | 25,306 |

* "Industries" includes duplications wherever one industry is served by more than one rail carrier.



SECTION 105. UTILIZATION

Analysis 105.3 Capacity of Rail Terminals - Major Terminal Districts by States

| | INDUSTRIES* ON TRACK | NUMBER OF YARDS | YARD TRACK MILES | YARD CAR CAPACITY | YARD ENGINE HOURS | SHOP CAPACITY ENGINE HOUSE | SHOP CAPACITY ENGINE REPAIR | SHOP CAPACITY CAR REPAIR |
|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 43,285 | 2,062 | 27,973.44 | 2,492,369 | 12,408,720 | 16,288 | 456,758 | 4,350,319 |
| Alabama | 1,156 | 38 | 479.93 | 42,402 | 135,220 | 158 | 9,643 | 103,223 |
| Arizona | 315 | 9 | 176.42 | 13,235 | 53,902 | 133 | 18,665 | 31,485 |
| Arkansas | 576 | 21 | 284.70 | 24,170 | 106,133 | 144 | 123 | 15,055 |
| California | 1,040 | 39 | 788.75 | 59,033 | 381,242 | 514 | 12,216 | 153,830 |
| Colorado | 696 | 22 | 393.64 | 37,631 | 142,077 | 277 | 153 | 81,103 |
| Connecticut | 412 | 12 | 97.68 | 11,319 | 57,535 | 61 | 2,552 | 7,622 |
| Delaware | 14 | 6 | 37.35 | 3,547 | 8,887 | 4 | 2,448 | 1,530 |
| Florida | 464 | 33 | 309.27 | 28,577 | 89,968 | 74 | 55 | 57,569 |
| Georgia | 1,933 | 58 | 657.54 | 61,305 | 287,097 | 253 | 16,662 | 113,851 |
| Idaho | 141 | 6 | 176.60 | 17,677 | 84,628 | 123 | 128 | 38,110 |
| Illinois | 2,896 | 113 | 2,265.49 | 186,390 | 990,315 | 1,232 | 1,978 | 298,712 |
| Indiana | 1,588 | 61 | 984.80 | 84,327 | 433,610 | 464 | 374 | 134,763 |
| Iowa | 1,859 | 68 | 895.54 | 71,269 | 504,204 | 1,013 | 583 | 118,484 |
| Kansas | 1,110 | 65 | 860.53 | 79,850 | 388,306 | 671 | 54,184 | 186,870 |
| Kentucky | 587 | 34 | 536.33 | 50,795 | 272,274 | 229 | 3,955 | 122,979 |
| Louisiana | 610 | 33 | 383.28 | 40,578 | 195,789 | 208 | 8,989 | 47,760 |
| Maine | 203 | 17 | 174.08 | 12,995 | 69,329 | 190 | 100 | 6,342 |
| Maryland | 193 | 14 | 275.46 | 23,634 | 134,683 | 96 | 3,870 | 37,504 |
| Massachusetts | 694 | 33 | 246.51 | 21,429 | 110,238 | 170 | 467 | 16,444 |
| Michigan | 2,097 | 66 | 1,243.85 | 105,566 | 444,944 | 611 | 5,223 | 112,553 |
| Minnesota | 821 | 40 | 626.60 | 50,390 | 202,898 | 570 | 330 | 80,681 |
| Mississippi | 731 | 34 | 298.29 | 32,532 | 177,566 | 157 | 537 | 36,798 |
| Missouri | 904 | 31 | 580.82 | 52,266 | 225,159 | 439 | 5,117 | 92,439 |
| Montana | 769 | 32 | 406.94 | 35,960 | 128,427 | 481 | 321 | 78,109 |
| Nebraska | 930 | 28 | 510.46 | 44,058 | 240,616 | 432 | 35 | 105,530 |
| Nevada | 47 | 2 | 69.94 | 6,984 | 25,888 | 77 | 82 | 13,960 |
| New Hampshire | 259 | 9 | 93.31 | 8,365 | 35,089 | 101 | 36 | 4,224 |
| New Jersey | 570 | 65 | 232.20 | 20,265 | 131,830 | 62 | 2,760 | 28,491 |
| New Mexico | 164 | 12 | 213.08 | 21,027 | 57,332 | 197 | 22,447 | 66,985 |
| New York | 1,951 | 112 | 1,481.37 | 130,852 | 930,259 | 758 | 17,174 | 85,405 |
| North Carolina | 1,363 | 60 | 486.06 | 50,708 | 284,992 | 198 | 16,476 | 140,381 |
| North Dakota | 498 | 15 | 228.82 | 18,065 | 87,302 | 267 | 63 | 15,468 |
| Ohio | 2,158 | 138 | 1,882.16 | 172,034 | 815,276 | 1,189 | 22,631 | 174,644 |
| Oklahoma | 899 | 27 | 445.90 | 44,941 | 184,187 | 230 | 26,567 | 82,276 |
| Oregon | 330 | 17 | 195.58 | 12,850 | 83,292 | 131 | 25 | 18,818 |
| Pennsylvania | 3,273 | 332 | 3,561.03 | 335,257 | 1,586,901 | 1,210 | 90,056 | 601,966 |
| Rhode Island | 42 | 1 | 7.88 | 687 | 3,006 | - | - | - |
| South Carolina | 641 | 22 | 278.30 | 32,396 | 162,246 | 93 | 4,780 | 128,328 |
| South Dakota | 485 | 14 | 154.33 | 12,162 | 68,439 | 208 | 4 | 20,072 |
| Tennessee | 279 | 19 | 192.97 | 17,347 | 82,330 | 117 | 25,187 | 68,201 |
| Texas | 2,284 | 83 | 1,381.55 | 132,320 | 443,650 | 875 | 28,892 | 254,605 |
| Utah | 133 | 6 | 169.81 | 12,653 | 110,687 | 77 | 52 | 21,495 |
| Vermont | 299 | 16 | 133.32 | 11,932 | 70,821 | 140 | 13,048 | 11,035 |
| Virginia | 825 | 52 | 706.28 | 67,355 | 320,421 | 263 | 34,180 | 206,064 |
| Washington | 695 | 22 | 411.01 | 27,247 | 118,328 | 207 | 94 | 63,435 |
| West Virginia | 900 | 46 | 784.41 | 67,138 | 447,360 | 301 | 3,169 | 100,329 |
| Wisconsin | 2,037 | 74 | 837.39 | 66,066 | 367,734 | 623 | 116 | 117,115 |
| Wyoming | 394 | 8 | 392.88 | 32,783 | 126,303 | 260 | 211 | 47,176 |

* "Industries" includes duplications wherever one industry is served by more than one rail carrier.

SECTION 105. UTILIZATION

Analysis 105.4 Rail Terminal Cars - Eastern District - 1932

| | ALL DELIVERIES | | | SINGLE CARRIER DELIVERIES | | | | MULTIPLE CARRIER DELIVERIES | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | HOUSE (000) | TEAM (000) | INDUSTRY (000) | HOUSE (000) | TEAM (000) | INDUSTRY (000) | CONNECTION DELVY (000) | HOUSE (000) | TEAM (000) | INDUSTRY (000) |
| UNITED STATES | 17,573 | 5,479 | 31,701 | 17,192 | 5,307 | 26,536 | 6,533 | 381 | 172 | 5,165 |
| EASTERN DISTRICT | 8,881 | 2,810 | 16,718 | 8,600 | 2,735 | 14,183 | 3,181 | 281 | 75 | 2,535 |
| NEW ENGLAND | 1,167 | 372 | 1,368 | 1,158 | 368 | 1,277 | 108 | 9 | 4 | 91 |
| Boston | 167 | 63 | 312 | 166 | 61 | 271 | 50 | 1 | 2 | 41 |
| Bridgeport | 25 | 11 | 21 | 25 | 11 | 21 | - | - | - | - |
| Fall River | 12 | 3 | 10 | 12 | 3 | 10 | - | - | - | - |
| Hartford | 41 | 12 | 24 | 41 | 12 | 24 | - | - | - | - |
| Lowell | 4 | 2 | 10 | 4 | 2 | 9 | 1 | - | - | 1 |
| Lynn | 3 | 2 | 7 | 3 | 2 | 7 | - | - | - | - |
| New Bedford | 5 | 5 | 5 | 5 | 5 | 5 | - | - | - | - |
| New Haven | 127 | 6 | 26 | 127 | 6 | 26 | - | - | - | - |
| Providence | 88 | 22 | 68 | 88 | 22 | 68 | 1 | - | - | - |
| Springfield | 50 | 12 | 36 | 48 | 11 | 30 | 6 | 2 | 1 | 6 |
| Worcester | 53 | 8 | 39 | 51 | 8 | 25 | 12 | 2 | - | 14 |
| Majors | 366 | 65 | 409 | 364 | 64 | 388 | 17 | 2 | 1 | 21 |
| Minors | 226 | 161 | 401 | 224 | 161 | 393 | 21 | 2 | - | 8 |
| TRUNK LINE | 3,851 | 1,396 | 7,258 | 3,799 | 1,368 | 6,856 | 757 | 52 | 28 | 402 |
| Albany | 31 | 14 | 65 | 31 | 14 | 52 | 17 | - | - | 13 |
| Baltimore | 172 | 77 | 188 | 171 | 76 | 180 | 62 | 1 | 1 | 8 |
| Buffalo | 173 | 24 | 328 | 145 | 18 | 233 | 193 | 28 | 6 | 95 |
| Erie | 28 | 6 | 56 | 28 | 6 | 49 | 17 | - | - | 7 |
| New York | 886 | 326 | 621 | 880 | 315 | 596 | 47 | 6 | 11 | 25 |
| Paterson | 4 | 5 | 18 | 4 | 5 | 18 | - | - | - | - |
| Philadelphia | 327 | 74 | 432 | 327 | 73 | 409 | 34 | - | 1 | 23 |
| Pittsburgh | 169 | 52 | 536 | 169 | 50 | 460 | 62 | - | 2 | 76 |
| Reading | 69 | 5 | 26 | 69 | 5 | 26 | - | - | - | - |
| Rochester | 58 | 18 | 63 | 58 | 16 | 53 | 10 | - | 2 | 10 |
| Scranton | 46 | 8 | 208 | 46 | 8 | 207 | 1 | - | - | 1 |
| Syracuse | 48 | 11 | 90 | 48 | 11 | 85 | 5 | - | - | 5 |
| Trenton | 100 | 3 | 29 | 100 | 3 | 29 | - | - | - | - |
| Utica | 83 | 4 | 26 | 81 | 4 | 21 | 4 | 2 | - | 5 |
| Washington | 32 | 31 | 64 | 31 | 29 | 58 | - | 1 | 2 | 6 |
| Wilmington | 22 | 3 | 28 | 22 | 3 | 21 | 6 | - | - | 7 |
| Majors | 1,096 | 256 | 2,011 | 1,085 | 254 | 1,910 | 166 | 11 | 2 | 104 |
| Minors | 507 | 479 | 2,466 | 504 | 478 | 2,449 | 133 | 3 | 1 | 17 |
| CENTRAL | 3,863 | 1,042 | 8,092 | 3,643 | 999 | 6,050 | 2,316 | 220 | 43 | 2,042 |
| Akron | 47 | 7 | 80 | 47 | 7 | 50 | 59 | - | - | 30 |
| Canton | 25 | 2 | 36 | 25 | 2 | 28 | 6 | - | - | 8 |
| Chicago | 891 | 126 | 1,593 | 725 | 109 | 662 | 1,027 | 166 | 17 | 931 |
| Cincinnati | 193 | 32 | 235 | 189 | 31 | 143 | 108 | 4 | 1 | 92 |
| Cleveland | 193 | 36 | 339 | 191 | 34 | 232 | 120 | 2 | 2 | 107 |
| Columbus | 135 | 6 | 78 | 126 | 6 | 41 | 35 | 9 | - | 37 |
| Dayton | 38 | 5 | 52 | 37 | 5 | 44 | 7 | 1 | - | 8 |
| Detroit | 155 | 33 | 413 | 153 | 31 | 278 | 151 | 2 | 2 | 135 |
| Evansville | 31 | 2 | 32 | 30 | 2 | 13 | 18 | 1 | - | 19 |
| Flint | 5 | 1 | 47 | 5 | 1 | 42 | 9 | - | - | 5 |
| Fort Wayne | 64 | 4 | 19 | 63 | 4 | 15 | 9 | 1 | - | 4 |
| Grand Rapids | 31 | 4 | 47 | 31 | 4 | 37 | 10 | - | - | 10 |
| Indianapolis | 147 | 14 | 128 | 145 | 14 | 94 | 73 | 2 | - | 34 |
| Milwaukee | 108 | 21 | 191 | 104 | 19 | 175 | 37 | 4 | 2 | 26 |
| Peoria | 42 | 9 | 71 | 41 | 7 | 18 | 63 | 1 | 2 | 53 |
| South Bend | 12 | 2 | 20 | 12 | 2 | 15 | 6 | - | - | 5 |
| Toledo | 129 | 9 | 336 | 126 | 7 | 254 | 85 | 3 | 2 | 82 |
| Youngstown | 24 | 5 | 96 | 24 | 5 | 78 | 33 | - | - | 18 |
| Majors | 1,104 | 162 | 2,506 | 1,083 | 153 | 2,171 | 282 | 21 | 9 | 335 |
| Minors | 489 | 562 | 1,773 | 486 | 556 | 1,670 | 178 | 3 | 6 | 103 |



SECTION 105. UTILIZATION

Analysis 105.5 Rail Terminal Cars - Southern and Western Districts - 1932

| | ALL DELIVERIES | | | SINGLE CARRIER DELIVERIES | | | | MULTIPLE CARRIER DELIVERIES | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | HOUSE (000) | TEAM (000) | INDUSTRY (000) | HOUSE (000) | TEAM (000) | INDUSTRY (000) | CONNECTION DELIVERY (000) | HOUSE (000) | TEAM (000) | INDUSTRY (000) |
| SOUTHERN DISTRICT | 3,271 | 843 | 5,824 | 3,232 | 829 | 5,183 | 770 | 39 | 14 | 641 |
| WESTERN DISTRICT | 5,421 | 1,826 | 9,159 | 5,360 | 1,743 | 7,170 | 2,582 | 61 | 83 | 1,989 |
| POCAHONTAS | 743 | 203 | 2,489 | 735 | 196 | 2,382 | 152 | 8 | 7 | 107 |
| Norfolk | 153 | 10 | 319 | 152 | 7 | 305 | 69 | 1 | 3 | 14 |
| Richmond | 82 | 7 | 76 | 79 | 6 | 37 | 34 | 3 | 1 | 39 |
| Majors | 416 | 42 | 584 | 413 | 41 | 536 | 38 | 3 | 1 | 48 |
| Minors | 92 | 144 | 1,510 | 91 | 142 | 1,504 | 11 | 1 | 2 | 6 |
| SOUTHEASTERN | 2,528 | 640 | 3,335 | 2,497 | 633 | 2,801 | 618 | 31 | 7 | 534 |
| Atlanta | 109 | 10 | 107 | 105 | 10 | 63 | 42 | 4 | - | 44 |
| Birmingham | 115 | 5 | 77 | 110 | 5 | 59 | 29 | 5 | - | 18 |
| Chattanooga | 64 | 2 | 31 | 64 | 2 | 21 | 29 | - | - | 10 |
| Jacksonville | 122 | 3 | 55 | 119 | 3 | 29 | 22 | 3 | - | 26 |
| Knoxville | 27 | 2 | 42 | 27 | 2 | 35 | 6 | - | - | 7 |
| Louisville | 83 | 10 | 111 | 83 | 10 | 65 | 67 | - | - | 46 |
| Memphis | 118 | 11 | 146 | 118 | 11 | 69 | 80 | - | - | 77 |
| Miami | 7 | 4 | 5 | 7 | 4 | 5 | - | - | - | - |
| Nashville | 56 | 3 | 80 | 56 | 3 | 71 | 10 | - | - | 9 |
| New Orleans | 92 | 16 | 103 | 88 | 14 | 60 | 104 | 4 | 2 | 43 |
| Tampa | 21 | 1 | 33 | 21 | 1 | 31 | 3 | - | - | 2 |
| Majors | 1,056 | 92 | 1,004 | 1,045 | 88 | 821 | 170 | 11 | 4 | 183 |
| Minors | 658 | 481 | 1,541 | 654 | 480 | 1,472 | 56 | 4 | 1 | 69 |
| WESTERN TRUNK LINE | 3,054 | 872 | 4,370 | 3,006 | 797 | 3,069 | 1,681 | 48 | 75 | 1,301 |
| Denver | 55 | 7 | 78 | 52 | 7 | 41 | 43 | 3 | - | 37 |
| Des Moines | 62 | 3 | 47 | 61 | 3 | 31 | 32 | 1 | - | 16 |
| Duluth | 64 | 23 | 213 | 62 | 23 | 146 | 66 | 2 | - | 67 |
| Kansas City | 261 | 17 | 495 | 260 | 10 | 202 | 298 | 1 | 7 | 293 |
| Minneapolis | 119 | 13 | 186 | 113 | 12 | 91 | 148 | 6 | 1 | 95 |
| Omaha | 105 | 11 | 104 | 103 | 6 | 47 | 177 | 2 | 5 | 57 |
| Saint Paul | 102 | 15 | 156 | 102 | 10 | 124 | 60 | - | 5 | 32 |
| Saint Louis | 357 | 60 | 465 | 335 | 17 | 101 | 417 | 22 | 43 | 364 |
| Wichita | 37 | 2 | 77 | 37 | 2 | 62 | 14 | - | - | 15 |
| Davenport | 43 | 5 | 62 | 42 | 4 | 49 | 15 | 1 | 1 | 13 |
| Majors | 1,063 | 123 | 1,167 | 1,056 | 115 | 916 | 275 | 7 | 8 | 251 |
| Minors | 786 | 593 | 1,320 | 783 | 588 | 1,292 | 136 | 3 | 5 | 61 |
| SOUTHWESTERN | 1,431 | 581 | 2,378 | 1,424 | 578 | 1,941 | 547 | 7 | 3 | 437 |
| Dallas | 71 | 6 | 104 | 71 | 6 | 63 | 30 | - | - | 41 |
| El Paso | 22 | 1 | 27 | 21 | 1 | 15 | 30 | 1 | - | 12 |
| Fort Worth | 60 | 3 | 75 | 60 | 3 | 24 | 91 | - | - | 51 |
| Houston | 103 | 8 | 148 | 103 | 8 | 126 | 41 | - | - | 22 |
| Little Rock | 32 | 3 | 36 | 32 | 3 | 27 | 8 | - | - | 9 |
| Oklahoma City | 34 | 1 | 64 | 34 | 1 | 40 | 30 | - | - | 24 |
| San Antonio | 43 | 4 | 37 | 43 | 4 | 28 | 11 | - | - | 9 |
| Tulsa | 34 | 2 | 56 | 34 | 2 | 43 | 16 | - | - | 13 |
| Majors | 560 | 83 | 795 | 556 | 82 | 591 | 209 | 4 | 1 | 204 |
| Minors | 472 | 470 | 1,036 | 470 | 468 | 984 | 81 | 2 | 2 | 52 |
| PACIFIC NORTHWEST | 405 | 136 | 1,033 | 401 | 134 | 932 | 133 | 4 | 2 | 101 |
| Portland | 35 | 5 | 88 | 35 | 5 | 72 | 38 | - | - | 16 |
| Seattle | 35 | 4 | 73 | 35 | 4 | 52 | 23 | - | - | 21 |
| Spokane | 41 | 1 | 36 | 40 | 1 | 17 | 21 | 1 | - | 19 |
| Tacoma | 14 | 1 | 52 | 14 | 1 | 41 | 14 | - | - | 11 |
| Majors | 177 | 21 | 300 | 174 | 20 | 273 | 19 | 3 | 1 | 27 |
| Minors | 103 | 104 | 484 | 103 | 103 | 477 | 18 | - | 1 | 7 |
| PACIFIC SOUTHWEST | 531 | 237 | 1,378 | 529 | 234 | 1,228 | 221 | 2 | 3 | 150 |
| Long Beach | 1 | - | 2 | 1 | - | 1 | 2 | - | - | 1 |
| Los Angeles | 69 | 17 | 127 | 69 | 17 | 72 | 50 | - | - | 55 |
| Salt Lake City | 32 | 2 | 44 | 32 | 2 | 38 | 8 | - | - | 6 |
| Oakland | 45 | 8 | 81 | 45 | 8 | 63 | 20 | - | - | 18 |
| San Diego | 4 | 2 | 6 | 4 | 2 | 5 | 2 | - | - | 1 |
| San Francisco | 79 | 25 | 100 | 79 | 23 | 81 | 58 | - | 2 | 19 |
| Majors | 168 | 31 | 341 | 167 | 30 | 301 | 22 | 1 | 1 | 40 |
| Minors | 133 | 152 | 677 | 132 | 152 | 667 | 59 | 1 | - | 10 |

SECTION 106 TERMINAL COSTS

Analysis 106.1 Carrier Terminal Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | NET RAIL | NET WATER | NET EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RAIL** | | | | | | | | | | | | | |
| Terminal - Total | $ 728,512 | 29% | $3,000 | $ 137 | $26.64 | $1.13 | $29.85 | $ 1.86 | $.0705 | $.0010 | $.0031 | | -$.0016 |
| Station | 153,986 | 6 | 634 | 29 | 5.67 | .24 | 6.31 | .39 | .0149 | .0002 | .0007 | | - .0003 |
| Delivery | 574,526 | 23 | 2,366 | 108 | 21.16 | .89 | 23.54 | 1.47 | .0556 | .0008 | .0024 | | - .0013 |
| **WATER** | | | | | | | | | | | | | |
| CARLOT | | | | | | | | | | | | | |
| Terminal - Total | $ 26,238 | 26% | $ 153 | $ 241 | - | $1.40 | $ 9.33 | $ 1.27 | - | -$.0014 | $.0008 | | - |
| Station | 16,878 | 16 | 99 | 155 | - | .90 | 6.00 | .82 | - | - .0009 | .0005 | | - |
| Delivery | 9,360 | 9 | 55 | 86 | - | .50 | 3.33 | .45 | - | - .0005 | .0003 | | - |
| CARGO | | | | | | | | | | | | | |
| Terminal - Total | $ 2,079 | 12% | $ 22 | $ 526 | - | $ .07 | $ 2.89 | $ .47 | - | -$.0001 | $.0001 | | - |
| Station | 1,554 | 9 | 17 | 393 | - | .05 | 2.16 | .35 | - | - .0001 | .0001 | | - |
| Delivery | 525 | 3 | 6 | 133 | - | .02 | .73 | .12 | - | - .0000 | .0000 | | - |
| **PIPE** | | | | | | | | | | | | | |
| Terminal - Total | $ 34,563 | 16% | $ 373 | - | - | $ .37 | - | - | - | -$.0011 | # | - | - |
| Station | 7,197 | 3 | 78 | - | - | .08 | - | - | - | - .0002 | # | - | - |
| Delivery | 27,366 | 13 | 295 | - | - | .29 | - | - | - | - .0009 | # | - | - |

# Pipe distance



SECTION 106. TERMINAL COSTS

Analysis 106.2 Water Terminal Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | NET TON MILE RAIL | NET TON MILE WATER |
|---|---|---|---|---|---|---|---|---|---|
| **CARLOT** | | | | | | | | | |
| TOTAL TERMINAL | | | | | | | | | |
| United States | $ 26,238 | 26% | $ 153 | $ 241 | $1.40 | $ 9.33 | $ 1.27 | $.0014 | $.0008 |
| Atlantic Coast | 7,670 | 31 | 343 | 536 | 1.64 | 10.72 | 1.35 | .0043 | .0039 |
| Atlantic Gulf | 3,342 | 25 | 128 | 2,926 | 1.46 | 11.80 | 1.18 | .0012 | .0010 |
| Intercoastal | 8,228 | 21 | 93 | 18,958 | 2.10 | 10.24 | 1.39 | .0008 | .0014 |
| Inland Waters | 2,984 | 35 | 314 | 4,414 | 1.30 | 13.44 | 3.52 | .0020 | .0013 |
| Great Lakes | 1,656 | 22 | 151 | 131 | .55 | 7.03 | .88 | .0014 | .0013 |
| Pacific Coast | 2,360 | 25 | 167 | 30 | .91 | 4.28 | .67 | .0023 | .0025 |
| STATION | | | | | | | | | |
| United States | $ 16,878 | 16% | $ 99 | $ 155 | $ .90 | $ 6.00 | $ .82 | $.0009 | $.0005 |
| Atlantic Coast | 3,948 | 16 | 176 | 277 | .84 | 5.52 | .69 | .0022 | .0020 |
| Atlantic Gulf | 1,986 | 15 | 76 | 1,739 | .87 | 7.01 | .70 | .0007 | .0006 |
| Intercoastal | 5,997 | 15 | 68 | 13,819 | 1.53 | 7.46 | 1.01 | .0006 | .0003 |
| Inland Waters | 2,028 | 24 | 214 | 3,000 | .88 | 9.14 | 2.40 | .0014 | .0009 |
| Great Lakes | 1,204 | 16 | 110 | 95 | .40 | 5.11 | .64 | .0011 | .0009 |
| Pacific Coast | 1,714 | 18 | 122 | 22 | .66 | 3.11 | .49 | .0017 | .0018 |
| DELIVERY | | | | | | | | | |
| United States | $ 9,360 | 9% | $ 55 | $ 86 | $ .50 | $ 3.33 | $ .45 | $.0005 | $.0003 |
| Atlantic Coast | 3,721 | 15 | 166 | 261 | .80 | 5.20 | .65 | .0021 | .0019 |
| Atlantic Gulf | 1,355 | 10 | 52 | 1,187 | .59 | 4.79 | .48 | .0005 | .0004 |
| Intercoastal | 2,230 | 06 | 25 | 5,139 | .57 | 2.78 | .38 | .0002 | .0001 |
| Inland Waters | 955 | 11 | 101 | 1,413 | .42 | 4.30 | 1.13 | .0006 | .0004 |
| Great Lakes | 452 | 06 | 41 | 36 | .15 | 1.91 | .24 | .0004 | .0004 |
| Pacific Coast | 646 | 07 | 46 | 8 | .25 | 1.17 | .18 | .0006 | .0007 |
| **CARGO** | | | | | | | | | |
| TOTAL TERMINAL | | | | | | | | | |
| United States | $ 2,079 | 12% | $ 22 | $ 526 | $ .07 | $ 2.89 | $ .47 | $.0001 | $.0001 |
| Atlantic Coast | 411 | 13 | 22 | 794 | .12 | 4.54 | .75 | .0002 | .0002 |
| Atlantic Gulf | 6 | # | 1 | 148 | .01 | .19 | .04 | .0001 | - |
| Intercoastal | 85 | 46 | 14 | 5,308 | 1.76 | 2.46 | .44 | .0006 | .0003 |
| Inland Waters | 27 | 03 | 7 | 117 | .05 | .40 | .11 | .0001 | - |
| Great Lakes | 1,442 | 13 | 29 | 662 | .06 | 4.00 | .50 | .0001 | .0001 |
| Pacific Coast | 109 | 29 | 19 | 112 | .67 | .81 | .25 | .0016 | .0016 |
| STATION | | | | | | | | | |
| United States | $ 1,554 | 9% | $ 17 | $ 393 | $ .05 | $ 2.16 | $ .35 | $.0001 | $.0001 |
| Atlantic Coast | 51 | 02 | 3 | 99 | .02 | .56 | .09 | - | - |
| Atlantic Gulf | - | 00 | - | - | - | .00 | .00 | - | - |
| Intercoastal | 63 | 35 | 10 | 3,957 | 1.31 | 1.82 | .33 | .0005 | .0002 |
| Inland Waters | 10 | 01 | 2 | 42 | .02 | .15 | .04 | - | - |
| Great Lakes | 1,321 | 12 | 27 | 606 | .06 | 3.67 | .46 | .0001 | - |
| Pacific Coast | 109 | 29 | 19 | 112 | .67 | .81 | .25 | .0016 | .0016 |
| DELIVERY | | | | | | | | | |
| United States | $ 525 | 3% | $ 6 | $ 133 | $ .02 | $ .73 | $ .12 | $.0000 | $.0000 |
| Atlantic Coast | 360 | 11 | 19 | 695 | .11 | 3.97 | .66 | .0002 | .0002 |
| Atlantic Gulf | 6 | # | 1 | 148 | .01 | .19 | .04 | .0001 | - |
| Intercoastal | 22 | 12 | 4 | 1,351 | .45 | .64 | .11 | .0002 | .0001 |
| Inland Waters | 17 | 02 | 4 | 75 | .03 | .25 | .07 | - | - |
| Great Lakes | 121 | 01 | 2 | 56 | .01 | .34 | .04 | - | - |
| Pacific Coast | - | 00 | - | - | - | .00 | .00 | - | - |

# Less than 1/2 per cent.

SECTION 106. TERMINAL COSTS

Analysis 106.3 Pipe Terminal Unit Costs - 193[illegible]

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | NET TON | NET TON MILE |
|---|---|---|---|---|---|
| TERMINAL TOTAL | | | | | |
| United States | $ 34,779 | 16% | $ 373 | $ .37 | $ .0011 |
| North Atlantic Coast | 3,022 | 33 | 205 | 1.07 | .0029 |
| Great Lakes Southwest | 15,003 | 15 | 335 | .60 | .0007 |
| Southwest Gulf | 16,755 | 16 | 503 | .31 | .0018 |
| STATION | | | | | |
| United States | $ 7,426 | 3% | $ 78 | $ .08 | $ .0002 |
| North Atlantic Coast | 334 | 4 | 23 | .12 | .0003 |
| Great Lakes Southwest | 3,112 | 3 | 69 | .12 | .0001 |
| Southwest Gulf | 3,980 | 4 | 120 | .07 | .0004 |
| DELIVERY | | | | | |
| United States | $ 27,354 | 13% | $ 295 | $ .29 | $ .0009 |
| North Atlantic Coast | 2,688 | 29% | 183 | .95 | .0025 |
| Great Lakes Southwest | 11,891 | 12 | 266 | .47 | .0006 |
| Southwest Gulf | 12,775 | 12 | 384 | .23 | .0014 |



SECTION 106. TERMINAL COSTS

Analysis 106.4 Rail Terminal Unit Costs - 1932

| | AGGREGATE (000) | PER CENT OF TOTAL COST | PER ROUTE MILE | PER SCHEDULE | PER VEHICLE | PER NET TON | PER SCHEDULE HOUR | PER SCHEDULE MILE | PER VEHICLE MILE | PER GROSS TON MILE | PER NET TON MILE | PER EQUATED TON MILE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TERMINAL - TOTAL | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 728,512 | 37% | 3,000 | 136.60 | 26.84 | 1.13 | 29.85 | 1.86 | .0705 | .00098 | .00309 | .00160 |
| New England | 31,261 | 39 | 4,096 | 125.99 | 19.38 | 1.29 | 36.68 | 2.53 | .0903 | .00146 | .00518 | .00268 |
| Trunk Line | 165,842 | 38 | 7,689 | 131.34 | 27.17 | 1.01 | 39.17 | 2.81 | .0882 | .00119 | .00344 | .00178 |
| Central | 186,767 | 40 | 4,869 | 176.00 | 27.28 | 1.08 | 36.05 | 2.17 | .0760 | .00103 | .00316 | .00163 |
| Pocahontas | 30,475 | 33 | 3,935 | 103.23 | 18.44 | .84 | 23.40 | 1.79 | .0546 | .00061 | .00243 | .00074 |
| Southeastern | 74,583 | 35 | 2,140 | 117.62 | 25.31 | 1.18 | 24.08 | 1.39 | .0648 | .00091 | .00287 | .00148 |
| Western Trunk Line | 129,814 | 39 | 2,193 | 140.80 | 27.14 | 1.40 | 28.01 | 1.68 | .0718 | .00103 | .00370 | .00191 |
| Southwestern | 50,079 | 33 | 1,404 | 107.34 | 23.83 | 1.16 | 21.07 | 1.21 | .0555 | .00078 | .00282 | .00146 |
| Pacific Northwest | 24,582 | 30 | 1,240 | 122.57 | 33.85 | 1.48 | 20.42 | 1.27 | .0464 | .00066 | .00238 | .00123 |
| Pacific Southwest | 35,109 | 32 | 1,953 | 144.66 | 33.38 | 1.99 | 23.04 | 1.42 | .0503 | .00078 | .00299 | .00155 |
| STATION | | | | | | | | | | | | |
| United States | $153,986 | 8% | $ 634 | $ 28.87 | $ 5.67 | $ .24 | $ 6.31 | $ .39 | $.0149 | $.00021 | $.00065 | $.00034 |
| New England | 8,506 | 11 | 1,114 | 34.28 | 5.27 | .33 | 9.98 | .69 | .0246 | .00040 | .00141 | .00073 |
| Trunk Line | 34,901 | 8 | 1,618 | 27.64 | 5.72 | .21 | 8.24 | .59 | .0186 | .00025 | .00072 | .00037 |
| Central | 34,203 | 7 | 892 | 32.23 | 5.00 | .20 | 6.60 | .40 | .0139 | .00019 | .00058 | .00030 |
| Pocahontas | 5,765 | 6 | 744 | 19.53 | 3.43 | .08 | 4.43 | .34 | .0103 | .00012 | .00027 | .00014 |
| Southeastern | 17,034 | 8 | 489 | 26.86 | 5.78 | .27 | 5.50 | .32 | .0148 | .00021 | .00065 | .00034 |
| Western Trunk Line | 27,218 | 8 | 460 | 29.52 | 5.69 | .29 | 5.87 | .35 | .0151 | .00022 | .00078 | .00040 |
| Southwestern | 12,277 | 8 | 344 | 26.32 | 5.84 | .28 | 5.16 | .30 | .0136 | .00019 | .00069 | .00036 |
| Pacific Northwest | 5,118 | 7 | 273 | 27.02 | 7.46 | .33 | 4.50 | .28 | .0102 | .00015 | .00052 | .00027 |
| Pacific Southwest | 8,664 | 8 | 482 | 35.70 | 8.24 | .49 | 5.69 | .35 | .0124 | .00019 | .00074 | .00038 |
| DELIVERY - TOTAL | | | | | | | | | | | | |
| United States | $574,526 | 29% | $2,366 | $107.73 | $21.16 | $ .89 | $23.54 | $1.47 | $.0556 | $.00077 | $.00244 | $.00126 |
| New England | 22,755 | 29 | 2,981 | 91.72 | 14.11 | .88 | 26.70 | 1.84 | .0658 | .00107 | .00377 | .00195 |
| Trunk Line | 130,941 | 30 | 6,070 | 103.70 | 21.46 | .80 | 30.92 | 2.22 | .0696 | .00094 | .00271 | .00140 |
| Central | 152,564 | 33 | 3,977 | 143.77 | 22.28 | .88 | 29.45 | 1.77 | .0620 | .00084 | .00258 | .00133 |
| Pocahontas | 24,710 | 26 | 3,190 | 83.70 | 14.71 | .36 | 18.97 | 1.45 | .0442 | .00049 | .00116 | .00060 |
| Southeastern | 57,549 | 27 | 1,651 | 90.76 | 19.53 | .91 | 18.58 | 1.07 | .0500 | .00070 | .00221 | .00114 |
| Western Trunk Line | 102,596 | 31 | 1,733 | 111.28 | 21.45 | 1.11 | 22.14 | 1.32 | .0567 | .00082 | .00292 | .00151 |
| Southwestern | 37,802 | 25 | 1,060 | 81.05 | 17.99 | .88 | 15.90 | .92 | .0419 | .00059 | .00213 | .00110 |
| Pacific Northwest | 19,164 | 23 | 967 | 95.55 | 26.39 | 1.15 | 15.92 | .99 | .0362 | .00051 | .00186 | .00096 |
| Pacific Southwest | 26,145 | 24 | 1,471 | 108.96 | 25.14 | 1.50 | 17.36 | 1.07 | .0379 | .00059 | .00225 | .00117 |
| SINGLE CARRIER DELIVERY | | | | | | | | | | | | |
| United States | $429,108 | 22% | $1,767 | $ 80.46 | $15.81 | $ .66 | $17.58 | $1.10 | $.0415 | $.00057 | $.00182 | $.00094 |
| New England | 20,791 | 26 | 2,724 | 83.80 | 12.89 | .80 | 24.40 | 1.68 | .0601 | .00097 | .00344 | .00178 |
| Trunk Line | 116,455 | 27 | 5,398 | 92.23 | 19.08 | .71 | 27.50 | 1.97 | .0619 | .00083 | .00241 | .00125 |
| Central | 98,168 | 21 | 2,559 | 92.51 | 14.34 | .57 | 18.95 | 1.14 | .0399 | .00054 | .00166 | .00086 |
| Pocahontas | 21,949 | 23 | 2,833 | 74.35 | 13.07 | .32 | 16.85 | 1.29 | .0393 | .00044 | .00103 | .00053 |
| Southeastern | 44,240 | 21 | 1,269 | 69.77 | 15.01 | .70 | 14.28 | .82 | .0384 | .00054 | .00170 | .00088 |
| Western Trunk Line | 62,641 | 19 | 1,058 | 67.94 | 13.09 | .68 | 13.51 | .81 | .0346 | .00050 | .00179 | .00092 |
| Southwestern | 28,535 | 19 | 800 | 61.17 | 13.58 | .66 | 12.00 | .69 | .0316 | .00044 | .00161 | .00083 |
| Pacific Northwest | 15,718 | 19 | 794 | 78.52 | 21.68 | .95 | 13.08 | .81 | .0297 | .00042 | .00152 | .00079 |
| Pacific Southwest | 20,581 | 18 | 1,144 | 84.80 | 19.57 | 1.17 | 13.51 | .83 | .0295 | .00046 | .00175 | .00091 |
| MULTIPLE CARRIER DELIVERY | | | | | | | | | | | | |
| United States | $145,418 | 7% | $ 599 | $ 27.27 | $ 5.36 | $ .23 | $ 5.96 | $ .37 | $.0141 | $.00019 | $.00062 | $.00032 |
| New England | 1,964 | 2 | 257 | 7.92 | 1.22 | .08 | 2.30 | .16 | .0057 | .00009 | .00033 | .00017 |
| Trunk Line | 14,486 | 3 | 672 | 11.47 | 2.37 | .09 | 3.42 | .24 | .0077 | .00010 | .00030 | .00016 |
| Central | 54,396 | 12 | 1,418 | 51.26 | 7.95 | .31 | 10.50 | .63 | .0221 | .00030 | .00092 | .00048 |
| Pocahontas | 2,761 | 3 | 356 | 9.35 | 1.64 | .04 | 2.12 | .16 | .0049 | .00006 | .00013 | .00007 |
| Southeastern | 13,309 | 6 | 382 | 20.99 | 4.52 | .21 | 4.30 | .25 | .0116 | .00016 | .00051 | .00026 |
| Western Trunk Line | 39,955 | 12 | 675 | 43.34 | 8.35 | .43 | 8.62 | .52 | .0221 | .00032 | .00114 | .00059 |
| Southwestern | 9,267 | 6 | 260 | 19.86 | 4.41 | .22 | 3.90 | .22 | .0103 | .00014 | .00052 | .00027 |
| Pacific Northwest | 3,426 | 4 | 172 | 17.04 | 4.70 | .21 | 2.84 | .18 | .0064 | .00009 | .00033 | .00017 |
| Pacific Southwest | 5,864 | 5 | 326 | 24.16 | 5.58 | .33 | 3.85 | .24 | .0084 | .00013 | .00050 | .00026 |

SECTION 106. TERMINAL COSTS

Analysis 106.5 Distribution or Terminal Cost per Loaded Car Between Station and Delivery

| DISTRICT OR TERRITORY | ALL DELIVERIES HOUSE | ALL DELIVERIES TEAM | ALL DELIVERIES INDUSTRY | SINGLE CARRIER DELIVERIES HOUSE | SINGLE CARRIER DELIVERIES TEAM | SINGLE CARRIER DELIVERIES INDUSTRY | MULTIPLE CARRIER DELIVERIES HOUSE | MULTIPLE CARRIER DELIVERIES TEAM | MULTIPLE CARRIER DELIVERIES INDUSTRY |
|---|---|---|---|---|---|---|---|---|---|
| **TERMINAL UNIT COST** | | | | | | | | | |
| United States | $12.81 | $11.17 | $13.95 | $12.62 | $10.63 | $11.41 | $21.28 | $27.72 | $26.98 |
| Eastern | 13.28 | 11.90 | 13.89 | 13.02 | 11.57 | 11.65 | 21.23 | 27.39 | 26.43 |
| Southern | 10.37 | 8.83 | 10.94 | 10.27 | 8.57 | 9.29 | 18.05 | 21.50 | 24.28 |
| Western | 13.49 | 11.00 | 15.98 | 13.38 | 10.14 | 12.48 | 22.94 | 28.98 | 28.57 |
| New England | 10.17 | 11.96 | 10.92 | 10.13 | 11.89 | 10.25 | 14.30 | 19.66 | 20.32 |
| Trunk Line | 14.30 | 12.47 | 12.86 | 14.12 | 12.03 | 11.72 | 28.20 | 33.79 | 32.46 |
| Central | 13.21 | 11.41 | 15.31 | 12.80 | 10.82 | 11.88 | 20.00 | 25.21 | 25.48 |
| Pocahontas | 11.24 | 6.60 | 8.36 | 11.14 | 6.04 | 7.62 | 21.07 | 23.34 | 24.67 |
| Southeastern | 10.11 | 9.55 | 12.86 | 10.02 | 9.36 | 10.70 | 17.35 | 26.74 | 24.19 |
| Western Trunk Line | 13.42 | 11.88 | 17.96 | 13.25 | 10.19 | 13.27 | 24.12 | 30.02 | 29.02 |
| Southwestern | 10.52 | 9.41 | 12.43 | 10.19 | 9.33 | 10.23 | 15.92 | 19.67 | 22.19 |
| Pacific Northwest | 16.28 | 12.95 | 15.72 | 16.18 | 12.76 | 13.78 | 25.58 | 29.34 | 33.70 |
| Pacific Southwest | 19.85 | 10.78 | 15.98 | 19.83 | 10.51 | 13.12 | 25.96 | 33.72 | 39.37 |
| **STATION UNIT COST** | | | | | | | | | |
| United States | $ 6.65 | $ 1.27 | $ .96 | $ 6.77 | $ 1.27 | $ .91 | $ 1.26 | $ 1.10 | $ 1.07 |
| Eastern | 6.55 | 1.12 | .97 | 6.71 | 1.11 | .89 | 1.59 | 1.39 | 1.35 |
| Southern | 5.37 | .91 | .79 | 5.42 | .91 | .34 | .96 | .96 | .96 |
| Western | 7.58 | 1.67 | 1.04 | 7.66 | 1.69 | 1.05 | 1.03 | 1.03 | 1.01 |
| New England | 5.55 | 1.46 | 1.08 | 5.58 | 1.47 | 1.10 | .87 | .87 | .87 |
| Trunk Line | 7.22 | .91 | .91 | 7.06 | .89 | .85 | 2.70 | 1.33 | 1.18 |
| Central | 6.39 | 1.30 | 1.01 | 6.71 | 1.30 | .90 | 1.30 | 1.31 | 1.33 |
| Pocahontas | 5.97 | .58 | .51 | 6.01 | .52 | .44 | 2.04 | 2.04 | 2.04 |
| Southeastern | 5.20 | 1.02 | 1.00 | 5.26 | 1.02 | 1.05 | .74 | .74 | .74 |
| Western Trunk Line | 7.07 | 1.77 | .95 | 7.17 | 1.84 | 1.00 | .88 | .87 | .85 |
| Southwestern | 6.22 | 1.59 | .97 | 6.24 | 1.60 | .95 | 1.11 | 1.17 | 1.11 |
| Pacific Northwest | 9.55 | 2.08 | 1.24 | 9.63 | 2.08 | 1.23 | 1.30 | 1.30 | 1.30 |
| Pacific Southwest | 12.74 | 1.20 | 1.19 | 12.79 | 1.20 | 1.21 | 1.06 | 1.06 | 1.06 |
| **DELIVERY UNIT COST** | | | | | | | | | |
| United States | $ 6.16 | $ 9.90 | $12.99 | $ 5.85 | $ 9.36 | $10.50 | $20.02 | $26.62 | $25.91 |
| Eastern | 6.73 | 10.78 | 12.92 | 6.31 | 10.46 | 10.76 | 19.64 | 26.00 | 25.08 |
| Southern | 5.00 | 7.92 | 10.15 | 4.85 | 7.66 | 8.95 | 17.09 | 23.54 | 23.32 |
| Western | 5.91 | 9.33 | 14.94 | 5.72 | 8.45 | 11.43 | 21.91 | 27.95 | 27.56 |
| New England | 4.62 | 10.50 | 9.84 | 4.55 | 10.42 | 9.15 | 13.43 | 18.79 | 19.45 |
| Trunk Line | 7.08 | 11.56 | 11.95 | 7.06 | 11.14 | 10.87 | 25.50 | 32.46 | 31.28 |
| Central | 6.82 | 10.11 | 14.30 | 6.09 | 9.52 | 10.98 | 18.70 | 23.90 | 24.15 |
| Pocahontas | 5.27 | 6.02 | 7.85 | 5.13 | 5.52 | 7.18 | 19.03 | 21.30 | 22.63 |
| Southeastern | 4.91 | 8.53 | 11.86 | 4.76 | 8.34 | 9.65 | 16.61 | 26.00 | 23.45 |
| Western Trunk Line | 6.35 | 10.11 | 17.01 | 6.08 | 8.35 | 12.27 | 23.24 | 29.15 | 28.17 |
| Southwestern | 4.30 | 7.82 | 11.46 | 4.25 | 7.73 | 9.28 | 14.81 | 18.50 | 21.08 |
| Pacific Northwest | 6.73 | 10.87 | 14.48 | 6.55 | 10.68 | 12.55 | 24.28 | 28.04 | 32.40 |
| Pacific Southwest | 7.11 | 9.58 | 14.79 | 7.04 | 9.31 | 11.91 | 24.90 | 32.66 | 38.31 |



SECTION 106. TERMINAL COSTS

Analysis 106.6 Rail Terminal Service - Track Unit Costs - Eastern District - 1932

| TERMINAL DISTRICT | COST PER TERMINAL CAR: ALL DELIVERIES HOUSE TRACK | ALL DELIVERIES TEAM TRACK | ALL DELIVERIES INDUSTRY TRACK | SINGLE CARRIER DELIVERIES HOUSE TRACK | SINGLE CARRIER DELIVERIES TEAM TRACK | SINGLE CARRIER DELIVERIES INDUSTRY TRACK | MULTIPLE CARRIER DELIVERIES HOUSE TRACK | MULTIPLE CARRIER DELIVERIES TEAM TRACK | MULTIPLE CARRIER DELIVERIES INDUSTRY TRACK | MULTIPLE CARRIER DELIVERIES INTERMEDIATE |
|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | $12.74 | $11.07 | $13.44 | $12.62 | $10.63 | $11.41 | $18.17 | $24.45 | $23.91 | $ 4.88 |
| EASTERN DISTRICT | 13.19 | 11.90 | 13.45 | 13.02 | 11.57 | 11.65 | 18.29 | 24.04 | 23.54 | 4.60 |
| NEW ENGLAND | 10.16 | 11.96 | 10.90 | 10.13 | 11.89 | 10.25 | 13.91 | 19.27 | 19.93 | - |
| Boston | 14.07 | 10.85 | 11.98 | 14.06 | 10.53 | 10.35 | 15.43 | 20.92 | 22.80 | - |
| Bridgeport | 9.22 | 11.78 | 11.04 | 9.22 | 11.78 | 11.04 | - | - | - | - |
| Fall River | 7.47 | 8.21 | 8.58 | 7.47 | 8.21 | 8.58 | - | - | - | - |
| Hartford | 9.65 | 10.89 | 9.66 | 9.65 | 10.89 | 9.66 | - | - | - | - |
| Lowell | 15.19 | 8.45 | 12.61 | 15.19 | 8.45 | 11.98 | - | - | 25.79 | - |
| Lynn | 7.85 | 8.44 | 7.63 | 7.85 | 8.44 | 7.63 | - | - | - | - |
| New Bedford | 14.03 | 8.32 | 8.83 | 14.03 | 8.32 | 8.83 | - | - | - | - |
| New Haven | 7.31 | 13.54 | 15.11 | 7.31 | 13.54 | 15.11 | - | - | - | - |
| Providence | 7.77 | 13.97 | 10.25 | 7.77 | 13.97 | 10.25 | - | - | - | - |
| Springfield | 6.94 | 13.56 | 10.87 | 6.59 | 13.11 | 9.32 | 13.78 | 19.21 | 18.08 | - |
| Worcester | 6.21 | 7.34 | 11.80 | 5.95 | 6.88 | 9.82 | 17.75 | 20.94 | 23.98 | - |
| Majors | 8.03 | 9.78 | 10.72 | 8.01 | 9.74 | 10.48 | 12.08 | 13.51 | 15.09 | - |
| Minors | 15.08 | 13.42 | 9.91 | 15.12 | 13.41 | 9.81 | 11.33 | 23.40 | 14.86 | - |
| TRUNK LINE | $14.21 | $12.31 | $12.48 | $14.12 | $12.03 | $11.72 | $20.95 | $25.67 | $25.45 | $6.83 |
| Albany | 19.00 | 13.14 | 19.30 | 19.00 | 13.14 | 16.38 | - | - | 30.60 | - |
| Baltimore | 15.30 | 11.57 | 11.28 | 15.30 | 11.28 | 10.81 | 16.76 | 27.95 | 21.30 | - |
| Buffalo | 15.85 | 18.65 | 17.47 | 14.65 | 16.21 | 12.71 | 22.00 | 25.54 | 29.13 | 5.20 |
| Erie | 12.05 | 8.21 | 15.00 | 12.03 | 8.10 | 12.71 | 20.74 | 26.07 | 30.51 | 4.57 |
| New York | 19.99 | 15.89 | 18.12 | 19.87 | 15.37 | 17.63 | 37.82 | 30.57 | 29.19 | 6.14 |
| Paterson | 16.37 | 11.09 | 10.48 | 16.37 | 11.09 | 10.48 | - | - | - | - |
| Philadelphia | 16.01 | 14.75 | 14.53 | 16.01 | 14.66 | 14.10 | - | 22.44 | 21.96 | 11.81 |
| Pittsburgh | 11.82 | 13.97 | 12.34 | 11.82 | 13.51 | 10.53 | - | 26.47 | 23.34 | - |
| Reading | 11.88 | 15.10 | 15.06 | 11.88 | 15.10 | 15.06 | - | - | - | - |
| Rochester | 14.53 | 12.38 | 15.42 | 14.13 | 10.08 | 12.20 | 25.10 | 32.34 | 32.15 | - |
| Scranton | 10.92 | 20.51 | 9.51 | 10.92 | 20.25 | 9.27 | - | 30.11 | 19.38 | - |
| Syracuse | 14.51 | 11.91 | 11.87 | 14.51 | 11.91 | 11.32 | - | - | 21.95 | - |
| Trenton | 9.10 | 13.12 | 15.76 | 9.10 | 13.06 | 15.76 | - | 21.47 | - | - |
| Utica | 8.00 | 9.93 | 13.35 | 7.90 | 9.93 | 11.74 | 12.74 | - | 21.02 | 3.25 |
| Washington | 11.35 | 13.01 | 12.86 | 11.49 | 12.64 | 12.40 | 7.56 | 17.68 | 17.30 | - |
| Wilmington | 10.93 | 16.82 | 17.67 | 10.93 | 16.37 | 14.54 | - | 26.09 | 27.57 | - |
| Majors | 10.91 | 12.10 | 13.36 | 10.84 | 12.06 | 12.84 | 16.96 | 18.67 | 22.87 | 6.59 |
| Minors | 12.77 | 9.11 | 9.25 | 12.75 | 9.10 | 9.17 | 15.43 | 19.88 | 19.70 | 6.48 |
| CENTRAL | $13.09 | $11.33 | $14.78 | $12.80 | $10.82 | $11.88 | $17.91 | $23.12 | $23.39 | $4.61 |
| Akron | 10.17 | 7.87 | 12.83 | 10.17 | 7.68 | 10.14 | - | 13.14 | 17.23 | - |
| Canton | 11.16 | 13.78 | 17.94 | 11.07 | 13.78 | 15.12 | 17.23 | - | 27.66 | - |
| Chicago | 15.97 | 16.10 | 19.11 | 14.97 | 14.56 | 12.51 | 20.32 | 26.18 | 23.80 | 5.72 |
| Cincinnati | 11.45 | 14.04 | 17.08 | 11.34 | 13.61 | 12.96 | 17.12 | 25.64 | 23.51 | 9.18 |
| Cleveland | 13.35 | 14.95 | 20.79 | 13.30 | 14.35 | 16.37 | 19.11 | 25.56 | 30.38 | 10.51 |
| Columbus | 8.73 | 11.20 | 16.78 | 8.17 | 11.20 | 11.41 | 17.08 | - | 22.74 | - |
| Dayton | 10.87 | 13.48 | 12.58 | 10.81 | 13.48 | 11.07 | 14.06 | - | 21.48 | - |
| Detroit | 13.30 | 11.51 | 16.79 | 13.28 | 10.79 | 13.57 | 14.80 | 21.18 | 23.40 | 5.16 |
| Evansville | 13.65 | 14.28 | 20.30 | 13.47 | 14.01 | 13.67 | 17.82 | 21.75 | 24.85 | 4.85 |
| Flint | 15.39 | 12.89 | 13.79 | 15.39 | 12.89 | 13.16 | - | - | 18.72 | - |
| Fort Wayne | 10.63 | 15.80 | 18.13 | 10.57 | 15.80 | 16.23 | 18.12 | - | 25.19 | 6.45 |
| Grand Rapids | 12.93 | 12.17 | 19.47 | 12.93 | 10.38 | 17.19 | - | 24.58 | 28.54 | 14.44 |
| Indianapolis | 10.21 | 14.91 | 17.52 | 10.10 | 14.91 | 14.65 | 16.85 | - | 25.50 | - |
| Milwaukee | 12.74 | 16.45 | 15.94 | 12.42 | 15.32 | 14.24 | 20.42 | 27.76 | 26.64 | 7.89 |
| Peoria | 8.93 | 8.61 | 15.47 | 8.86 | 7.43 | 18.91 | 10.91 | 13.77 | 14.27 | 4.13 |
| South Bend | 10.66 | 8.44 | 17.71 | 10.66 | 8.44 | 14.58 | - | - | 26.67 | 3.42 |
| Toledo | 9.87 | 13.48 | 14.24 | 9.74 | 11.92 | 11.33 | 15.29 | 20.15 | 23.23 | 7.85 |
| Youngstown | 11.56 | 12.84 | 23.40 | 11.56 | 12.84 | 20.94 | - | - | 33.94 | 24.22 |
| Majors | 8.75 | 10.84 | 12.52 | 8.65 | 10.30 | 11.24 | 13.82 | 20.17 | 20.87 | 22.11 |
| Minors | 23.04 | 9.66 | 11.21 | 23.09 | 9.57 | 10.15 | 15.42 | 17.99 | 23.15 | 4.65 |

SECTION 106. TERMINAL COSTS

Analysis 106.7 Rail Terminal Service - Track Unit Costs - 1932
Southern and Western Districts

| TERMINAL DISTRICT | COST PER TERMINAL CAR: ALL DELIVERIES | | | SINGLE CARRIER DELIVERIES | | | MULTIPLE CARRIER DELIVERIES | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | HOUSE TRACK | TEAM TRACK | INDUSTRY TRACK | HOUSE TRACK | TEAM TRACK | INDUSTRY TRACK | HOUSE TRACK | TEAM TRACK | INDUSTRY TRACK | INTERMEDIATE |
| UNITED STATES | $12.74 | $11.07 | $13.44 | $12.62 | $10.63 | $11.41 | $18.17 | $24.45 | $23.91 | $4.88 |
| SOUTHERN DISTRICT | 10.35 | 8.81 | 10.79 | 10.27 | 8.57 | 9.29 | 16.70 | 23.15 | 22.93 | 7.23 |
| WESTERN DISTRICT | 13.45 | 10.83 | 15.11 | 13.38 | 10.14 | 12.46 | 19.05 | 25.09 | 24.68 | 4.90 |
| POCAHONTAS | 11.21 | 6.50 | 8.23 | 11.14 | 6.04 | 7.62 | 18.13 | 20.40 | 21.73 | 7.75 |
| Norfolk | 14.79 | 14.60 | 13.23 | 14.75 | 10.49 | 12.67 | 24.51 | 23.31 | 25.19 | 17.66 |
| Richmond | 10.67 | 9.12 | 20.33 | 10.26 | 7.62 | 19.98 | 20.15 | 19.81 | 20.66 | 8.10 |
| Majors | 8.90 | 9.87 | 9.65 | 8.85 | 9.58 | 8.54 | 15.20 | 22.94 | 22.06 | 7.36 |
| Minors | 16.23 | 4.79 | 5.99 | 16.27 | 4.74 | 5.96 | 7.66 | 9.06 | 12.33 | 1.65 |
| SOUTHERN | 10.10 | 9.54 | 12.70 | 10.02 | 9.36 | 10.70 | 16.35 | 25.74 | 25.19 | 6.96 |
| Atlanta | 8.76 | 10.54 | 15.37 | 8.54 | 10.04 | 10.26 | 14.16 | 22.06 | 22.73 | 9.00 |
| Birmingham | 8.94 | 16.16 | 14.73 | 8.69 | 16.18 | 12.67 | 14.69 | - | 21.43 | - |
| Chattanooga | 8.69 | 18.99 | 17.37 | 8.69 | 18.99 | 13.42 | - | - | 25.76 | 33.55 |
| Jacksonville | 7.35 | 13.92 | 16.81 | 7.19 | 13.92 | 12.55 | 15.45 | - | 21.55 | 10.40 |
| Knoxville | 13.07 | 21.08 | 18.98 | 13.07 | 21.08 | 17.81 | - | - | 24.80 | 10.45 |
| Louisville | 13.88 | 14.05 | 22.42 | 13.87 | 14.05 | 17.36 | 21.15 | - | 29.70 | 8.07 |
| Memphis | 10.32 | 10.44 | 16.95 | 10.32 | 10.24 | 11.71 | - | 21.82 | 21.69 | 3.91 |
| Miami | 21.75 | 19.87 | 23.58 | 21.75 | 19.73 | 23.41 | - | 28.90 | 32.77 | - |
| Nashville | 13.09 | 14.01 | 16.66 | 13.09 | 14.01 | 15.68 | - | - | 24.89 | 16.27 |
| New Orleans | 17.71 | 18.97 | 21.69 | 17.50 | 17.88 | 19.08 | 21.66 | 29.27 | 25.25 | 5.07 |
| Tampa | 13.45 | 9.79 | 23.92 | 13.45 | 9.79 | 23.58 | - | - | 29.37 | - |
| Majors | 8.42 | 11.29 | 15.83 | 8.32 | 10.58 | 13.73 | 17.68 | 28.47 | 25.16 | 6.45 |
| Minors | 11.66 | 8.47 | 7.72 | 11.67 | 8.45 | 7.47 | 9.33 | 14.06 | 13.01 | 5.08 |
| WESTERN TRUNK LINE | 13.35 | 11.51 | 16.67 | 13.25 | 10.19 | 13.27 | 10.79 | 25.69 | 24.69 | 4.40 |
| Denver | 13.61 | 13.53 | 20.37 | 13.30 | 13.53 | 12.85 | 19.97 | - | 28.61 | 8.24 |
| Des Moines | 13.56 | 23.27 | 30.06 | 13.41 | 28.89 | 23.19 | 30.40 | - | 43.34 | 5.36 |
| Duluth | 15.81 | 21.11 | 27.26 | 15.39 | 20.99 | 23.20 | 27.56 | 29.01 | 36.35 | 8.05 |
| Kansas City | 12.10 | 17.78 | 17.00 | 12.07 | 13.11 | 8.05 | 20.32 | 24.53 | 23.17 | 6.11 |
| Minneapolis | 14.70 | 15.47 | 24.71 | 14.10 | 14.21 | 15.73 | 25.97 | 31.62 | 33.29 | 6.53 |
| Omaha | 7.64 | 25.46 | 26.85 | 7.31 | 16.74 | 19.31 | 20.66 | 36.20 | 33.09 | 5.87 |
| St. Paul | 9.33 | 11.28 | 13.93 | 9.30 | 8.50 | 12.24 | 13.45 | 16.97 | 20.57 | 5.45 |
| St. Louis | 11.22 | 19.00 | 17.42 | 11.88 | 10.24 | 11.77 | 14.12 | 22.52 | 18.98 | 4.05 |
| Wichita | 8.81 | 9.41 | 14.32 | 8.81 | 9.41 | 13.00 | - | - | 19.71 | 4.28 |
| Davenport | 10.59 | 14.18 | 18.19 | 10.49 | 13.19 | 14.97 | 20.38 | 26.44 | 29.83 | 5.79 |
| Majors | 10.36 | 13.81 | 14.98 | 10.28 | 13.12 | 11.98 | 24.00 | 22.63 | 25.92 | 4.96 |
| Minors | 19.57 | 8.92 | 13.74 | 19.58 | 8.88 | 13.43 | 16.29 | 14.93 | 20.21 | 5.62 |
| SOUTHWESTERN | 10.51 | 8.54 | 12.04 | 10.49 | 9.33 | 10.23 | 13.80 | 17.55 | 20.07 | 4.93 |
| Dallas | 8.17 | 9.73 | 13.33 | 8.17 | 9.73 | 9.32 | - | - | 19.55 | 8.13 |
| El Paso | 5.42 | 3.56 | 9.86 | 5.35 | 3.55 | 8.15 | 8.79 | - | 12.04 | 1.88 |
| Fort Worth | 8.67 | 10.69 | 17.08 | 8.67 | 10.36 | 10.93 | - | 20.26 | 19.96 | 3.31 |
| Houston | 10.36 | 14.21 | 15.13 | 10.36 | 14.21 | 12.89 | - | - | 27.59 | 1.74 |
| Little Rock | 9.43 | 8.30 | 13.93 | 9.43 | 8.30 | 11.86 | - | - | 20.01 | - |
| Oklahoma City | 9.08 | 15.68 | 14.50 | 9.08 | 15.68 | 11.03 | - | - | 20.37 | 2.95 |
| San Antonio | 6.95 | 16.70 | 16.91 | 6.87 | 16.70 | 14.91 | 15.29 | - | 23.48 | - |
| Tulsa | 7.32 | 8.14 | 10.20 | 7.32 | 8.14 | 8.71 | - | - | 15.14 | 4.40 |
| Majors | 8.49 | 11.73 | 13.86 | 8.45 | 11.61 | 11.57 | 13.86 | 21.65 | 20.47 | 3.22 |
| Minors | 14.48 | 8.84 | 9.48 | 14.48 | 8.79 | 9.01 | 14.52 | 16.80 | 18.31 | 9.68 |
| PACIFIC NORTHWEST | 16.24 | 12.91 | 15.36 | 16.18 | 12.76 | 13.78 | 21.88 | 25.64 | 30.00 | 10.59 |
| Portland | 14.03 | 16.03 | 19.53 | 14.03 | 16.03 | 16.95 | - | - | 31.14 | 10.75 |
| Seattle | 20.29 | 16.34 | 18.77 | 20.24 | 16.34 | 15.28 | 25.53 | - | 27.50 | - |
| Spokane | 9.15 | 13.18 | 18.82 | 8.98 | 13.18 | 11.33 | 16.28 | - | 25.70 | 13.63 |
| Tacoma | 10.13 | 13.92 | 16.77 | 10.13 | 13.92 | 13.25 | - | - | 29.62 | 13.74 |
| Majors | 13.28 | 14.85 | 16.47 | 13.08 | 14.23 | 14.56 | 26.12 | 32.09 | 35.59 | 6.10 |
| Minors | 24.41 | 12.29 | 13.10 | 24.41 | 12.17 | 12.82 | 23.25 | 25.14 | 32.46 | 7.84 |
| PACIFIC SOUTHWEST | 19.83 | 10.72 | 15.22 | 19.83 | 10.51 | 12.95 | 20.42 | 28.18 | 33.83 | 22.15 |
| Long Beach | 24.77 | 3.05 | 13.13 | 24.77 | 3.05 | 8.46 | - | - | 23.34 | - |
| Los Angeles | 19.23 | 21.60 | 26.23 | 19.23 | 21.60 | 17.84 | - | - | 37.21 | 37.05 |
| Salt Lake City | 11.59 | 10.40 | 16.26 | 11.59 | 10.40 | 14.46 | - | - | 27.77 | 28.35 |
| Oakland | 23.25 | 17.11 | 22.01 | 23.26 | 17.04 | 19.46 | 20.04 | 48.30 | 31.27 | 14.18 |
| San Diego | 27.09 | 14.79 | 18.40 | 27.09 | 14.04 | 16.01 | - | 25.44 | 30.14 | - |
| San Francisco | 22.61 | 15.00 | 23.82 | 22.61 | 14.13 | 21.36 | - | 25.95 | 34.30 | 12.99 |
| Majors | 16.61 | 17.75 | 18.65 | 16.61 | 17.28 | 15.65 | 20.07 | 35.10 | 41.10 | 6.66 |
| Minors | 22.98 | 7.03 | 9.61 | 23.03 | 7.03 | 9.46 | 18.09 | - | 18.84 | 2.91 |



SECTION 106. TERMINAL COSTS

Analysis 106.8 Functional Distribution of Terminal Unit Costs Per Car - 1932

ALL AND LOCAL TRAFFIC

| DISTRICT OR TERRITORY | ALL EXPENSES | ADMINISTRATION | TAXES | ROADWAY | POWER | CAR EXPENSE | ASSEMBLAGE | STATION | MARINE EXPENSES |
|---|---|---|---|---|---|---|---|---|---|
| ALL TERMINAL CARS | | | | | | | | | |
| United States | $11.76 | $1.03 | $1.12 | $.41 | $.55 | $3.61 | $2.89 | $2.02 | $.13 |
| Eastern | 12.00 | 1.05 | 1.14 | .37 | .64 | 3.51 | 3.12 | 1.98 | .19 |
| Southern | 9.81 | .91 | .99 | .37 | .44 | 2.90 | 2.40 | 1.72 | .08 |
| Western | 12.45 | 1.07 | 1.17 | .48 | .46 | 4.15 | 2.78 | 2.27 | .07 |
| New England | 10.37 | .89 | .97 | .48 | .48 | 2.64 | 2.61 | 2.26 | .04 |
| Trunk Line | 12.50 | 1.11 | 1.21 | .30 | .74 | 3.36 | 3.26 | 2.12 | .40 |
| Central | 11.89 | 1.03 | 1.12 | .41 | .59 | 3.82 | 3.10 | 1.79 | .03 |
| Pocahontas | 8.49 | .82 | .89 | .29 | .45 | 2.45 | 2.14 | 1.30 | .15 |
| Southeastern | 10.46 | .96 | 1.04 | .41 | .43 | 3.10 | 2.54 | 1.93 | .05 |
| Western Trunk Line | 12.71 | 1.11 | 1.21 | .50 | .49 | 4.23 | 2.89 | 2.19 | .09 |
| Southwestern | 10.14 | .84 | .92 | .37 | .35 | 3.61 | 2.04 | 2.00 | .01 |
| Pacific Northwest | 14.40 | 1.25 | 1.35 | .77 | .50 | 4.66 | 3.31 | 2.55 | .01 |
| Pacific Southwest | 14.80 | 1.27 | 1.37 | .42 | .52 | 4.65 | 3.50 | 2.95 | .12 |
| SINGLE CARRIER - HOUSE TRACK | | | | | | | | | |
| United States | $12.62 | $1.11 | $1.21 | $.33 | $.47 | $1.55 | $2.32 | $5.43 | $.20 |
| Eastern | 13.02 | 1.15 | 1.24 | .32 | .57 | 1.47 | 2.57 | 5.38 | .32 |
| Southern | 10.27 | .94 | 1.03 | .28 | .37 | 1.25 | 1.97 | 4.35 | .07 |
| Western | 13.38 | 1.16 | 1.25 | .38 | .38 | 1.86 | 2.13 | 6.15 | .07 |
| New England | 10.13 | .87 | .94 | .37 | .37 | 1.06 | 2.01 | 4.48 | .03 |
| Trunk Line | 14.12 | 1.26 | 1.37 | .23 | .64 | 1.66 | 2.61 | 5.66 | .69 |
| Central | 12.80 | 1.11 | 1.21 | .41 | .56 | 1.40 | 2.70 | 5.38 | .03 |
| Pocahontas | 11.14 | 1.06 | 1.15 | .24 | .47 | 1.09 | 2.14 | 4.82 | .17 |
| Southeastern | 10.02 | .91 | .99 | .29 | .34 | 1.29 | 1.93 | 4.22 | .05 |
| Western Trunk Line | 13.25 | 1.17 | 1.26 | .44 | .43 | 1.79 | 2.33 | 5.75 | .08 |
| Southwestern | 10.49 | .87 | .95 | .26 | .27 | 1.57 | 1.55 | 5.01 | .01 |
| Pacific Northwest | 16.18 | 1.40 | 1.52 | .52 | .42 | 1.99 | 2.60 | 7.73 | - |
| Pacific Southwest | 19.83 | 1.70 | 1.84 | .23 | .34 | 3.02 | 2.25 | 10.26 | .19 |
| SINGLE CARRIER - TEAM TRACK | | | | | | | | | |
| United States | $10.63 | $.93 | $1.01 | $.40 | $.47 | $4.09 | $2.48 | $1.03 | $.22 |
| Eastern | 11.57 | 1.02 | 1.10 | .36 | .62 | 4.31 | 2.99 | .90 | .27 |
| Southern | 8.57 | .80 | .86 | .32 | .38 | 3.18 | 2.09 | .73 | .02 |
| Western | 10.44 | .87 | .95 | .42 | .29 | 4.17 | 1.84 | 1.36 | .24 |
| New England | 11.89 | 1.03 | 1.11 | .58 | .47 | 4.81 | 2.68 | 1.18 | .03 |
| Trunk Line | 12.03 | 1.07 | 1.16 | .28 | .75 | 4.23 | 3.30 | .72 | .52 |
| Central | 10.82 | .94 | 1.02 | .39 | .49 | 4.25 | 2.67 | 1.04 | .02 |
| Pocahontas | 6.04 | .59 | .64 | .27 | .39 | 1.84 | 1.83 | .42 | .06 |
| Southeastern | 9.36 | .86 | .93 | .60 | .37 | 3.60 | 2.17 | .82 | .01 |
| Western Trunk Line | 10.19 | .90 | .97 | .39 | .30 | 3.84 | 1.83 | 1.48 | .48 |
| Southwestern | 9.33 | .78 | .84 | .43 | .27 | 4.16 | 1.57 | 1.28 | - |
| Pacific Northwest | 12.76 | 1.10 | 1.20 | .91 | .43 | 4.59 | 2.86 | 1.67 | - |
| Pacific Southwest | 10.51 | .90 | .98 | .23 | .26 | 5.07 | 1.94 | .96 | .17 |
| SINGLE CARRIER - INDUSTRY TRACK | | | | | | | | | |
| United States | $11.41 | $1.01 | $1.09 | $.46 | $.60 | $4.24 | $3.16 | $.73 | $.12 |
| Eastern | 11.65 | 1.02 | 1.10 | .40 | .69 | 4.17 | 3.39 | .72 | .16 |
| Southern | 9.29 | .87 | .95 | .40 | .46 | 3.42 | 2.47 | .27 | .10 |
| Western | 12.46 | 1.07 | 1.17 | .61 | .53 | 4.97 | 3.23 | .83 | .05 |
| New England | 10.25 | .88 | .95 | .58 | .57 | 3.26 | 3.08 | .88 | .05 |
| Trunk Line | 11.72 | 1.04 | 1.13 | .34 | .79 | 3.90 | 3.55 | .69 | .28 |
| Central | 11.88 | 1.03 | 1.12 | .43 | .61 | 4.67 | 3.26 | .72 | .04 |
| Pocahontas | 7.62 | .74 | .80 | .31 | .44 | 2.74 | 2.10 | .35 | .14 |
| Southeastern | 10.70 | .98 | 1.06 | .49 | .48 | 4.00 | 2.79 | .84 | .06 |
| Western Trunk Line | 13.27 | 1.17 | 1.26 | .66 | .58 | 5.37 | 3.35 | .80 | .08 |
| Southwestern | 10.23 | .85 | .93 | .46 | .40 | 4.48 | 2.34 | .76 | .01 |
| Pacific Northwest | 13.78 | 1.19 | 1.29 | .87 | .52 | 5.40 | 3.50 | .99 | .02 |
| Pacific Southwest | 12.95 | 1.11 | 1.20 | .55 | .61 | 4.40 | 4.07 | .93 | .08 |

SECTION 106. TERMINAL COSTS

Analysis 106.9 Functional Distribution of Terminal Unit Costs Per Car - 1932

MULTIPLE CARRIER TRAFFIC

| DISTRICT OR TERRITORY | ALL EXPENSES | ADMINISTRATION | TAXES | ROADWAY | POWER | CAR EXPENSE | ASSEMBLAGE | STATION | MARINE EXPENSES |
|---|---|---|---|---|---|---|---|---|---|
| CONNECTION DELIVERY | | | | | | | | | |
| United States | $12.04 | $1.05 | $1.14 | $.28 | $.42 | $5.75 | $2.58 | $.82 | $.03 |
| Eastern | 12.34 | 1.08 | 1.16 | .29 | .49 | 5.56 | 2.75 | .98 | .03 |
| Southern | 10.94 | 1.00 | 1.08 | .27 | .40 | 4.84 | 2.60 | .70 | .05 |
| Western | 12.07 | 1.03 | 1.12 | .29 | .34 | 6.25 | 2.35 | .67 | .02 |
| New England | 9.28 | .79 | .85 | .26 | .41 | 4.15 | 2.09 | .67 | .06 |
| Trunk Line | 11.93 | 1.05 | 1.14 | .25 | .59 | 5.07 | 2.90 | .91 | .02 |
| Central | 12.62 | 1.10 | 1.19 | .31 | .45 | 5.79 | 2.74 | 1.01 | .03 |
| Pocahontas | 10.94 | 1.03 | 1.12 | .25 | .47 | 4.18 | 2.36 | 1.32 | .21 |
| Southeastern | 10.95 | .99 | 1.07 | .28 | .39 | 5.00 | 2.66 | .55 | .01 |
| Western Trunk Line | 12.37 | 1.07 | 1.16 | .27 | .34 | 6.54 | 2.42 | .56 | .01 |
| Southwestern | 9.43 | .78 | .85 | .23 | .28 | 4.62 | 1.73 | .93 | - |
| Pacific Northwest | 14.53 | 1.25 | 1.36 | .32 | .33 | 7.18 | 2.99 | .84 | - |
| Pacific Southwest | 14.84 | 1.27 | 1.38 | .32 | .40 | 7.51 | 2.96 | .79 | .21 |
| MULTIPLE CARRIER - HOUSE TRACK | | | | | | | | | |
| United States | $18.17 | $1.58 | $1.72 | $.65 | $.98 | $6.85 | $5.35 | $1.00 | $.04 |
| Eastern | 18.29 | 1.60 | 1.72 | .64 | 1.06 | 6.56 | 5.45 | 1.22 | .04 |
| Southern | 16.70 | 1.52 | 1.65 | .60 | .87 | 6.13 | 5.13 | .70 | .10 |
| Western | 19.05 | 1.63 | 1.77 | .81 | .91 | 7.65 | 5.56 | .70 | .02 |
| New England | 13.91 | 1.19 | 1.28 | .62 | .82 | 5.15 | 4.10 | .67 | .08 |
| Trunk Line | 20.95 | 1.84 | 1.99 | .55 | 1.41 | 6.76 | 6.18 | 2.17 | .05 |
| Central | 17.91 | 1.56 | 1.69 | .67 | .97 | 6.63 | 5.33 | 1.03 | .03 |
| Pocahontas | 18.13 | 1.69 | 1.84 | .61 | 1.25 | 5.30 | 5.85 | 1.32 | .27 |
| Southeastern | 16.35 | 1.48 | 1.60 | .60 | .79 | 6.33 | 4.95 | .55 | .05 |
| Western Trunk Line | 19.79 | 1.70 | 1.86 | .85 | .98 | 7.79 | 6.00 | .60 | .01 |
| Southwestern | 13.80 | 1.13 | 1.23 | .48 | .56 | 6.27 | 3.17 | .93 | .03 |
| Pacific Northwest | 21.88 | 1.91 | 2.09 | .96 | .85 | 9.41 | 5.82 | .84 | - |
| Pacific Southwest | 20.42 | 1.79 | 1.95 | .59 | .63 | 9.79 | 4.67 | .79 | .21 |
| MULTIPLE CARRIER - TEAM TRACK | | | | | | | | | |
| United States | $21.45 | $2.14 | $2.32 | $.81 | $1.20 | $10.28 | $6.70 | $.87 | $.13 |
| Eastern | 21.04 | 2.10 | 2.27 | .73 | 1.47 | 9.21 | 7.07 | 1.06 | .13 |
| Southern | 23.15 | 2.11 | 2.29 | .79 | 1.18 | 9.06 | 6.59 | .70 | .43 |
| Western | 25.09 | 2.17 | 2.36 | .90 | .95 | 11.63 | 6.31 | .70 | .07 |
| New England | 19.27 | 1.63 | 1.76 | .71 | 1.16 | 7.37 | 5.63 | .67 | .34 |
| Trunk Line | 25.67 | 2.27 | 2.47 | .68 | 2.08 | 8.24 | 8.62 | 1.07 | .24 |
| Central | 23.12 | 2.01 | 2.17 | .76 | 1.11 | 9.78 | 6.20 | 1.04 | .05 |
| Pocahontas | 20.40 | 1.92 | 2.08 | .66 | 1.17 | 6.85 | 5.43 | 1.32 | .97 |
| Southeastern | 25.74 | 2.31 | 2.51 | .90 | 1.25 | 10.66 | 7.52 | .55 | .04 |
| Western Trunk Line | 25.69 | 2.23 | 2.43 | .90 | .97 | 11.96 | 6.54 | .59 | .07 |
| Southwestern | 17.55 | 1.46 | 1.57 | .63 | .57 | 9.04 | 3.31 | .98 | - |
| Pacific Northwest | 25.64 | 2.22 | 2.41 | 1.37 | .88 | 11.71 | 6.21 | .84 | - |
| Pacific Southwest | 28.18 | 2.46 | 2.67 | .68 | 1.04 | 13.71 | 6.62 | .79 | .21 |
| MULTIPLE CARRIER - INDUSTRY TRACK | | | | | | | | | |
| United States | $23.91 | $2.08 | $2.27 | $.80 | $1.19 | $9.90 | $6.77 | $.85 | $.05 |
| Eastern | 23.54 | 2.06 | 2.22 | .80 | 1.32 | 9.16 | 6.90 | 1.03 | .05 |
| Southern | 22.93 | 2.09 | 2.27 | .73 | 1.08 | 9.22 | 6.74 | .70 | .10 |
| Western | 24.68 | 2.12 | 2.30 | .86 | 1.06 | 11.02 | 6.61 | .68 | .03 |
| New England | 19.93 | 1.70 | 1.83 | .75 | 1.23 | 7.68 | 5.94 | .67 | .13 |
| Trunk Line | 25.45 | 2.25 | 2.45 | .74 | 1.70 | 9.48 | 7.79 | .95 | .09 |
| Central | 23.39 | 2.04 | 2.21 | .82 | 1.23 | 9.24 | 6.75 | 1.06 | .04 |
| Pocahontas | 21.73 | 2.03 | 2.21 | .56 | 1.12 | 8.50 | 5.62 | 1.32 | .37 |
| Southeastern | 23.19 | 2.10 | 2.28 | .77 | 1.08 | 9.39 | 6.99 | .55 | .03 |
| Western Trunk Line | 24.69 | 2.15 | 2.33 | .88 | 1.06 | 11.02 | 6.66 | .57 | .02 |
| Southwestern | 20.07 | 1.67 | 1.81 | .62 | .89 | 9.11 | 5.04 | .93 | - |
| Pacific Northwest | 30.00 | 2.59 | 2.82 | 1.51 | 1.25 | 12.58 | 8.40 | .84 | .01 |
| Pacific Southwest | 33.83 | 2.88 | 3.13 | .77 | 1.38 | 15.28 | 9.39 | .79 | .21 |



SECTION 106. TERMINAL COSTS

Analysis 106.10 Distribution of Switch Engine Time Among Services - 1932

| | WEIGHTED AVERAGE HOURS PER CAR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | SINGLE CARRIER | | | MULTIPLE CARRIER | | | | LINE SERVICE | |
| SEGREGATED METROPOLITAN DISTRICTS | HOUSE TRACK | TEAM TRACK | INDUSTRY TRACK | ROAD HAUL CARRIER | HOUSE TRACK | TEAM TRACK | INDUSTRY TRACK | INTERMEDIATE | INTERCHANGE | SINGLE CARRIER YARDING |
| SEGREGATED METROPOLITAN DISTRICTS * | | | | | | | | | | |
| Boston | .21 | .31 | .37 | .26 | .27 | .44 | .59 | - | .21 | .07 |
| Buffalo | .36 | .49 | .45 | .27 | .42 | .55 | .51 | .32 | .27 | .16 |
| New York | .31 | .41 | .42 | .36 | .38 | - | .57 | .33 | .26 | .34 |
| Philadelphia | .30 | .41 | .59 | .32 | - | .60 | .74 | .47 | .32 | .25 |
| Pittsburgh | .26 | .36 | .35 | .31 | - | - | .55 | - | .34 | .17 |
| Washington | .31 | .53 | .53 | - | .52 | .80 | .77 | - | .27 | .16 |
| Chicago | .30 | .39 | .50 | .35 | .33 | .40 | .47 | .24 | .34 | .21 |
| Cincinnati | .30 | .41 | .51 | .28 | .38 | .48 | .55 | .49 | .25 | .15 |
| Cleveland | .33 | .61 | .66 | .42 | .39 | - | .73 | - | .42 | .17 |
| Detroit | .33 | .45 | .52 | .31 | - | - | .55 | .35 | .33 | .24 |
| Toledo | .40 | .60 | .37 | .21 | - | - | .52 | .40 | .21 | .12 |
| Atlanta | .38 | .53 | .67 | .53 | - | .31 | .88 | .63 | .38 | .24 |
| Birmingham | .40 | .48 | .47 | .35 | .26 | - | .57 | - | .28 | .15 |
| Louisville | .62 | .56 | 1.05 | .41 | .72 | - | 1.14 | - | .41 | .16 |
| Memphis | .29 | .29 | .38 | .23 | - | - | .43 | .23 | .20 | .10 |
| New Orleans | .34 | .45 | .65 | .27 | .48 | .46 | .56 | .21 | .31 | .23 |
| Denver | .38 | .33 | .46 | .34 | .37 | - | .59 | .40 | .32 | .13 |
| Kansas City | .39 | .30 | .38 | .31 | .43 | .37 | .45 | .25 | .30 | .18 |
| Minneapolis | .32 | .38 | .55 | .29 | - | - | .59 | .33 | .25 | .17 |
| Omaha | .22 | .31 | .51 | .17 | .25 | .34 | .51 | .27 | .18 | .14 |
| St. Paul | .30 | .52 | .53 | .25 | - | .53 | .58 | .24 | .25 | .16 |
| St. Louis | .29 | .37 | .53 | .21 | .43 | .56 | .58 | .28 | .17 | .28 |
| Dallas | .23 | .43 | .54 | .32 | .27 | .50 | .74 | .25 | .29 | .09 |
| Fort Worth | .26 | .27 | .51 | .21 | - | .32 | .57 | .19 | .21 | .09 |
| Houston | .41 | .45 | .50 | .25 | - | .39 | .49 | .09 | .22 | .10 |
| Portland | .44 | .36 | .58 | .37 | - | - | .67 | .18 | .37 | .17 |
| Seattle | .41 | .45 | .51 | .18 | - | - | .55 | - | .18 | .16 |
| Los Angeles | .32 | .41 | .61 | .37 | - | - | .77 | .64 | .35 | .30 |
| San Francisco | .36 | .50 | .82 | .30 | - | .53 | .86 | .32 | .30 | .08 |
| OTHER METROPOLITAN DISTRICTS | | | | | | | | | | |
| New England | .29 | .30 | .46 | .38 | .41 | .39 | .51 | .19 | .26 | .12 |
| Trunk Line | .37 | .47 | .61 | .54 | - | - | .79 | - | .32 | .19 |
| Central | .27 | .37 | .43 | .19 | .29 | .34 | .41 | .28 | .19 | .11 |
| Pocahontas | .30 | .34 | .25 | .28 | .58 | .46 | .38 | .45 | .14 | .07 |
| Southeastern | .34 | .47 | .55 | .22 | .34 | - | .51 | - | .28 | .11 |
| Western Trunk Line | .32 | .55 | .42 | .28 | .28 | .47 | .43 | .33 | .25 | .12 |
| Southwestern | .22 | .34 | .46 | .21 | .36 | - | .45 | - | .22 | .12 |
| Pacific Northwest | .16 | .33 | .33 | .28 | - | - | .48 | .67 | .21 | .09 |
| Pacific Southwest | .30 | .31 | .61 | .19 | - | - | .72 | - | .19 | .16 |
| MAJOR TERMINAL DISTRICTS | | | | | | | | | | |
| New England | .23 | .26 | .36 | .12 | .26 | - | .26 | - | .13 | .12 |
| Trunk Line | .30 | .41 | .46 | .18 | - | - | .51 | .32 | .20 | .07 |
| Central | .26 | .45 | .46 | .24 | .32 | .73 | .54 | .39 | .25 | .13 |
| Pocahontas | .28 | .37 | .33 | .25 | - | - | .38 | - | .24 | .08 |
| Southeastern | .20 | .37 | .42 | .30 | .23 | .68 | .43 | .29 | .19 | .09 |
| Western Trunk Line | .22 | .29 | .34 | .25 | .64 | - | .44 | .25 | .26 | .08 |
| Southwestern | .23 | .41 | .38 | .20 | .23 | .33 | .41 | .13 | .18 | .09 |
| Pacific Northwest | .25 | .32 | .32 | .18 | - | - | .46 | - | .16 | .08 |
| Pacific Southwest | .34 | .35 | .96 | .32 | .29 | .46 | 1.10 | .32 | .30 | .10 |
| MINOR TERMINAL DISTRICTS | | | | | | | | | | |
| New England | .15 | .21 | .20 | - | - | - | - | - | .08 | .02 |
| Trunk Line | .13 | .12 | .14 | .15 | - | - | - | .18 | .09 | .07 |
| Central | .17 | .21 | .26 | - | - | - | .51 | - | .16 | .05 |
| Pocahontas | .14 | .18 | .23 | - | .18 | - | .14 | - | .05 | .04 |
| Southeastern | .11 | .19 | .15 | - | - | - | - | - | .09 | .08 |
| Western Trunk Line | .21 | .09 | .23 | - | - | - | - | - | .06 | .06 |
| Southwestern | .12 | .14 | .18 | .20 | - | - | .25 | .17 | .14 | .08 |
| Pacific Northwest | .10 | .14 | .15 | - | - | - | .29 | - | .15 | .07 |
| Pacific Southwest | .14 | .10 | .28 | - | - | - | .22 | - | .08 | .09 |

* Districts at which terminal studies were individually applied.

SECTION 106. TERMINAL COSTS

Analysis 106.11 Distribution of Way Freight Train Hours Among Services - 1932

| DISTRICT | PERCENT OF TOTAL TIME | | | | | | | TRAIN HOURS PER CAR | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | YARDS | | | | | | | | | |
| | ROAD | TOTAL | STATION | DELIVERY | INTERMEDIATE | INTERCHANGE | ROAD TRAIN | HOUSE TRACK | TRAM TRACK | INDUSTRY TRACK | CONNECTION |
| UNITED STATES | 41% | 46% | 6% | 31% | #% | 2% | 6% | .13 | .15 | .19 | .16 |
| EASTERN DISTRICT | 32% | 49% | 5% | 30% | 1% | 1% | 8% | .14 | .15 | .20 | .16 |
| SOUTHERN DISTRICT | 55% | 45% | 8% | 29% | - | 1% | 7% | .12 | .19 | .18 | - |
| WESTERN DISTRICT | 55% | 45% | 6% | 32% | #% | 2% | 5% | .14 | .13 | .20 | .20 |
| NEW ENGLAND | 56% | 44% | 5% | 31% | - | 2% | 2% | .14 | .20 | .22 | - |
| TRUNK LINE | 51% | 49% | 4% | 25% | 2% | 2% | 16% | .13 | .11 | .13 | .15 |
| CENTRAL FREIGHT ASSOCIATION | 50% | 50% | 7% | 34% | - | 6% | 3% | .17 | .21 | .26 | - |
| SOUTHERN | 55% | 45% | 8% | 29% | - | 1% | 7% | .12 | .19 | .18 | - |
| WESTERN TRUNK LINE | 57% | 43% | 5% | 29% | - | 1% | 8% | .21 | .09 | .23 | - |
| SOUTHWESTERN | 51% | 49% | 8% | 35% | #% | 3% | 3% | .12 | .14 | .19 | .20 |
| PACIFIC NORTHWEST | 61% | 39% | 4% | 29% | - | #% | 6% | .10 | .14 | .16 | - |
| PACIFIC SOUTHWEST | 48% | 53% | 4% | 39% | - | 6% | 3% | .14 | .10 | .28 | - |

# Less than 1/2%.



SECTION 106. TERMINAL COSTS
Analysis 106.12 Terminal Trucking Operations

| EQUIPMENT | EXPENSE PER 8-HOUR DAY PER VEHICLE | | | | | | TOTAL OPERATING EXPENSE |
|---|---|---|---|---|---|---|---|
| | VARIABLE EXPENSE | | | FIXED EXPENSE | | | |
| | VEHICLE | WAGES | TOTAL | VEHICLE | OVERHEAD | TOTAL | |
| 7½ Ton Tractor, 5 Trailers | $ - | $ - | $ - | $ - | $ - | $ - | $ 42.60 |
| 7½ Ton Tractor, 5 Trailers | 4.37 | 3.63 | 8.00 | 11.68 | 1.22 | 12.90 | 20.90 |
| 7½ Ton Tractor | 5.03 | 6.52 | 11.55 | 4.15 | 4.29 | 8.44 | 19.99 |
| 5 Ton Tractor* | 4.48 | 6.18 | 10.66 | 3.39 | 4.29 | 7.68 | 18.34 |
| 5 Ton Tractor* | 3.19 | 4.56 | 7.75 | 3.91 | 3.26 | 7.17 | 14.92 |
| 3½ Ton Tractor, 2 Trailers | $ 5.56 | $10.00 | $15.56 | $ 5.25 | $ 5.30 | $10.55 | $ 26.11 |
| 3½ Ton Tractor, 3 Trailers | 5.94 | 6.22 | 11.76 | 10.36 | 3.84 | 14.20 | 25.96 |
| 3½ Ton Tractor, 2 Trailers | 2.85 | 10.00 | 12.85 | 4.02 | 5.36 | 9.38 | 22.23 |
| 3½ Ton Tractor, 5 Trailers | 4.27 | 7.54 | 11.81 | 7.05 | 2.17 | 9.22 | 21.03 |
| 3 Ton Tractor* | 2.11 | 5.76 | 7.87 | 2.65 | 4.29 | 6.94 | 14.81 |
| 2½ Ton Tractor* | $ - | $ - | $ - | $ - | $ - | $ - | $ 19.15 |
| 2½ Ton Tractor, 3 Trailers | 6.32 | 6.05 | 12.37 | 3.46 | 2.44 | 5.90 | 18.27 |
| 2½ Ton Tractor* | - | - | - | - | - | - | 15.36 |
| 2½ Ton Tractor, 2 Trailers | 3.16 | 3.98 | 9.14 | 1.89 | 4.01 | 5.90 | 15.04 |
| 5-7½ Ton Trucks | $ 3.08 | $ 6.81 | $ 9.89 | $ 7.09 | $ 8.27 | $15.36 | $ 25.25 |
| 5-7½ Ton Trucks | 2.56 | 9.88 | 12.44 | 2.08 | 7.61 | 9.69 | 22.13 |
| 5 Ton Trucks | 5.34 | 6.51 | 8.85 | 2.02 | 6.16 | 8.18 | 17.03 |
| 5-7½ Ton Trucks | 2.09 | 6.53 | 8.62 | 1.84 | 5.80 | 7.64 | 16.26 |
| 3 Ton Trucks | $ 2.83 | $ 6.42 | $ 9.25 | $ 5.58 | $ 6.62 | $12.20 | $ 21.45 |
| 3 Ton Trucks | 3.02 | 11.21 | 14.23 | 3.83 | 2.73 | 6.56 | 20.79 |
| 2-3 Ton Trucks | 2.96 | 7.84 | 10.90 | 2.81 | 5.78 | 8.59 | 19.39 |
| 3 Ton Trucks | 2.02 | 5.98 | 8.00 | 1.01 | 2.21 | 3.22 | 11.22 |
| 1 Ton Trucks | $ 1.55 | $ 6.78 | $ 8.33 | $ 7.45 | $ 3.88 | $11.33 | $ 19.66 |
| 1½-2½ Ton Trucks | 2.59 | 6.11 | 8.70 | 3.53 | 4.23 | 7.76 | 16.46 |
| 2 Ton Trucks | - | - | - | - | - | - | 12.81 |
| 1½-2½ Ton Trucks | 1.52 | 2.97 | 4.49 | 1.34 | 1.12 | 2.46 | 6.95 |

VEHICLE VARIABLE EXPENSE covers direct operating expense such as: gasoline; lubricants (oil, grease); tires; vehicle supplies; maintenance and repairs.
WAGES include salaries of drivers and helpers. In general each vehicle has only a driver.
VEHICLE FIXED EXPENSE includes; depreciation; insurance; licenses; taxes; and in some cases, interest on investment in vehicles.
OVERHEAD EXPENSE covers: garage rent; garage service (light, heat, power, etc.); maintenance overhead; office rent, services and supplies; administration; clerical; miscellaneous.
*Trailer expense not available and not included.

| TYPE OF EQUIPMENT | PERFORMANCE PER 8-HOUR DAY PER VEHICLE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | MILES | COST PER MILE CENTS | NUMBER OF ONE-WAY TRIPS PER 8-HOUR DAY | | | | RATIO OF LOADED TRIPS TO TOTAL TRIPS | RATIO OF LOADED MILES TO TOTAL MILES |
| | | | LOADED | EMPTY | CHASSIS | TOTAL | | |
| Tractor Semitrailers, shuttle | 29.21 | 45.2 | 11.43 | 4.51 | 3.28 | 19.22 | 59.5 | - |
| Truck, Comtainers, shuttle | 40.00 | 68.0 | 10.78 | 5.85 | 2.93 | 19.57 | 55.1 | 64.7 |
| Tractor Semitrailers, shuttle | 63.07 | 44.2 | 8.36 | 4.66 | 7.40 | 20.41 | 40.9 | 46.0 |
| Tractor Semitrailers, shuttle | 29.42 | 51.0 | 7.41 | 1.22 | 4.29 | 12.92 | 57.3 | 65.3 |
| Tractor Semitrailers, shuttle | 17.61 | 242.0 | 5.68 | 2.76 | - | 8.44 | 67.3 | 67.2 |
| Tractor Semitrailers, shuttle | 21.94 | 96.0 | 5.34 | - | - | - | - | - |
| Tractor Semitrailers, shuttle | 21.01 | 78.7 | 4.73 | 2.73 | 4.62 | 12.09 | 39.1 | 53.8 |
| Tractor Semitrailers, shuttle | 19.75 | 72.5 | 4.23 | 3.09 | 1.68 | 9.00 | 47.1 | 42.2 |
| Tractor Semitrailers, shuttle | 21.93 | 95.2 | 3.62 | 2.97 | 3.97 | 10.55 | 34.3 | 37.3 |
| Tractor and 1 semitrailer | 20.60 | 62.0 | 3.50 | 2.75 | 1.00 | 7.25 | 48.3 | 53.3 |
| Truck | 19.13 | 59.1 | 3.52 | 1.97 | - | 5.39 | 65.6 | 77.4 |

"CHASSIS" trips refer to tractor moving without semitrailer or truck moving without container.
"SHUTTLE" movement refers to tractors hauling one semitrailer to destination, uncoupling, and picking up another semitrailer, not waiting for the first one to be unloaded. A truck hauling demountable bodies performs a similar function.

## SECTION 106. TERMINAL COSTS

### Analysis 106.13 Scale of Terminal and Distribution Costs of Handling Freight Traffic in Containers

| LENGTH OF HAUL | | | TRUCK MILES | | | TRUCK COST | |
|---|---|---|---|---|---|---|---|
| LOADED | | TOTAL | PER HOUR | PER 8-HOUR DAY | TRIPS PER DAY | PER DAY | PER CONTAINER |
| 1-1/2 | | 2-1/2 | 4-1/2 | 35 | 14 | $ 19.20 | $ 1.37 |
| 2 | - 3 | 4 | 5 | 40 | 10 | 19.80 | 1.98 |
| 3 | - 4 | 6 | 6 | 50 | 8 | 21.00 | 2.63 |
| 4 | - 6 | 8-1/2 | 7-1/2 | 60 | 7 | 22.20 | 3.17 |
| 6 | - 10 | 13 | 10 | 80 | 6 | 24.60 | 4.10 |
| 10 | - 14 | 20 | 12-1/2 | 100 | 5 | 27.00 | 5.40 |
| 15 | - 20 | 30 | 15 | 120 | 4 | 29.40 | 7.35 |
| 21 | - 27 | 40 | 15 | 120 | 3 | 29.40 | 9.80 |
| 27 | - 33 | 50 | 17 | 150 | 3 | 34.00 | 11.33 |

Truck cost - $15.00 per day fixed cost plus 12¢ per mile
» One hour overtime @ $1.00 allowed

### ESTIMATED TRACTOR-SEMITRAILER OPERATING COSTS IN CONTAINER MOVEMENT

| MILES PER 8-HOUR DAY | AVERAGE COST, DOLLARS PER DAY (306 DAYS PER YEAR)/ | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 30 | 40 | 50 | 60 | 80 | 100 | 120 | 150 |
| VARIABLE COSTS | | | | | | | | |
| Fuel, less tax | $ .93 | $ 1.24 | $ 1.55 | $ 1.86 | $ 2.48 | $ 3.10 | $3.72 | $4.65 |
| Oil, less tax | .09 | .12 | .15 | .18 | .24 | .30 | .36 | .45 |
| Tires, including repairs | .88 | 1.17 | 1.46 | 1.75 | 2.34 | 2.92 | 3.51 | 4.39 |
| Garage Miscellaneous | .22 | .29 | .36 | .43 | .58 | .72 | .87 | 1.08 |
| Maintenance | .94 | 1.26 | 1.57 | 1.88 | 2.51 | 3.14 | 3.77 | 4.71 |
| Variable Fees, including fuel & oil tax | .83 | 1.10 | 1.38 | 1.65 | 2.20 | 2.75 | 3.30 | 4.13 |
| Total Variable Costs | $3.88 | $ 5.18 | $ 6.47 | $ 7.76 | $10.35 | $ 12.91 | $15.53 | $19.41 |
| FIXED COSTS// | | | | | | | | |
| Vehicle depreciation | $2.24 | $ 2.24 | $ 2.24 | $ 2.24 | $ 2.24 | $ 2.24 | $2.24 | $2.24 |
| Vehicle Insurance | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| Driver's Wages | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 |
| Garage Rent | .54 | .54 | .54 | .54 | .54 | .54 | .54 | .54 |
| General Overhead and Miscellaneous | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 |
| Licenses and Taxes, fixed | .82 | .82 | .82 | .82 | .82 | .82 | .82 | .82 |
| TOTAL FIXED COSTS | $14.57 | $14.57 | $14.57 | $14.57 | $14.57 | $14.57 | $14.57 | $14.57 |
| TOTAL OPERATING COSTS | $18.45 | $19.75 | $21.04 | $22.33 | $24.92 | $27.51 | $30.10 | $33.98 |

/ For maximum or minimum normal deviation apply ± 22.5% to total variable costs and 19.5% to total fixed costs.
// Interest on investment in vehicles not included in above costs.



### Analysis 107.1 Carrier Line Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | SCHEDULE | VEHICLE | NET TON | SCHEDULE HOUR | SCHEDULE MILE | VEHICLE MILE | PER TON MILE GROSS | PER TON MILE NET RAIL | PER TON MILE NET WATER | PER TON MILE EQUATED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAIL | | | | | | | | | | | | | |
| Line - Total | $1,237,467 | 49% | $5,096 | $ 232 | $45.58 | $1.92 | $50.70 | $3.16 | $.1198 | $.0017 | $.0053 | - | $.0027 |
| Station | 50,852 | 2 | 209 | 10 | 1.87 | .08 | 2.08 | .13 | .0049 | .0001 | .0002 | - | .0001 |
| Conveyance | 876,664 | 35 | 3,610 | 164 | 32.29 | 1.36 | 35.92 | 2.24 | .0849 | .0012 | .0037 | - | .0019 |
| Yardings | 309,950 | 13 | 1,277 | 58 | 11.42 | .48 | 12.70 | .79 | .0300 | .0004 | .0013 | - | .0007 |
| Single Carrier | 165,664 | 7 | 683 | 31 | 6.10 | .26 | 6.79 | .42 | .0160 | .0002 | .0007 | - | .0004 |
| Multiple Carrier | 144,286 | 6 | 594 | 27 | 5.32 | .22 | 5.91 | .37 | .0140 | .0002 | .0006 | - | .0003 |
| WATER | | | | | | | | | | | | | |
| CARLOT | | | | | | | | | | | | | |
| Line - Total | $ 83,302 | 81% | $ 487 | 765 | | - $4.44 | $29.63 | $4.02 | - | -$.0046 | $.0025 | - | |
| Station | 2,383 | 2 | 14 | 22 | | - .13 | .85 | .12 | - | - .0001 | .0001 | - | |
| Conveyance | 80,920 | 79 | 473 | 743 | | - 4.31 | 28.79 | 3.91 | - | - .0045 | .0025 | - | |
| CARGO | | | | | | | | | | | | | |
| Line - Total | $ 19,850 | 116% | $ 214 | $5,023 | | - $ .70 | $27.60 | $4.44 | - | -$.0010 | $.0010 | - | |
| Station | 133 | 1 | 1 | 34 | | - .00 | .18 | .03 | - | - .0000 | .0000 | - | |
| Conveyance | 19,716 | 115 | 212 | 4,989 | | - .69 | 27.42 | 4.41 | - | - .0010 | .0010 | - | |
| PIPE | | | | | | | | | | | | | |
| Line - Total | $ 67,186 | 32% | $ 724 | - | | - $ .81 | - | - | - | -$.0021# | - | - | |
| Station | - | - | - | - | | - - | - | - | - | - - | - | - | |
| Conveyance | 67,186 | 32 | 724 | - | | - .81 | - | - | - | - .0021# | - | - | |

# Pipe distance.

SECTION 107. LINE COSTS

Analysis 107.2 Rail Line Unit Costs - 1932

| | AGGREGATE (000) | PER CENT OF TOTAL COST | PER ROUTE MILE | PER SCHED-ULE | PER SCHED-ULE HOUR | PER SCHED-ULE MILE | PER VEHI-CLE ORIG. OR EQUAT-ED | PER VEHI-CLE MILE | PER NET TON | PER NET TON MILE | PER EQUAT-ED TON MILE | PER GROSS TON MILE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LINE - TOTAL | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 1,237,467 | 63% | 5,096 | 232.04 | 50.70 | 3.16 | 45.58 | .1198 | 1.92 | .00585 | .00272 | .00166 |
| New England | 48,221 | 61 | 6,317 | 194.36 | 56.59 | 3.90 | 29.90 | .1394 | 1.87 | .00799 | .00413 | .00226 |
| Trunk Line | 265,524 | 62 | 12,310 | 210.28 | 62.71 | 4.50 | 43.52 | .1412 | 1.62 | .00521 | .00285 | .00190 |
| Central | 278,652 | 60 | 7,264 | 262.59 | 53.79 | 3.23 | 40.71 | .1133 | 1.61 | .00471 | .00244 | .00153 |
| Pocahontas | 62,954 | 67 | 8,128 | 213.26 | 48.33 | 3.70 | 37.48 | .1127 | .91 | .00296 | .00153 | .00126 |
| Southeastern | 139,548 | 65 | 4,004 | 220.08 | 45.05 | 2.60 | 47.36 | .1213 | 2.22 | .00536 | .00277 | .00170 |
| Western Trunk Line | 203,745 | 61 | 3,442 | 220.99 | 43.96 | 2.63 | 42.59 | .1127 | 2.20 | .00581 | .00300 | .00163 |
| Southwestern | 103,317 | 67 | 2,897 | 221.46 | 43.46 | 2.50 | 49.17 | .1145 | 2.40 | .00583 | .00302 | .00161 |
| Pacific Northwest | 58,714 | 70 | 2,962 | 292.76 | 48.77 | 3.03 | 80.86 | .1109 | 3.52 | .00569 | .00294 | .00158 |
| Pacific Southwest | 76,790 | 69 | 4,272 | 316.39 | 50.40 | 3.11 | 73.02 | .1101 | 4.35 | .00654 | .00339 | .00171 |
| STATION | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 50,852 | 3% | 209 | 9.54 | 2.08 | .13 | 1.87 | .0049 | .08 | .00022 | .00011 | .00007 |
| New England | 2,555 | 3 | 335 | 10.30 | 3.00 | .21 | 1.58 | .0074 | .10 | .00042 | .00022 | .00012 |
| Trunk Line | 11,887 | 3 | 551 | 9.41 | 2.81 | .20 | 1.95 | .0063 | .07 | .00025 | .00013 | .00009 |
| Central | 11,969 | 3 | 312 | 11.28 | 2.31 | .14 | 1.75 | .0049 | .07 | .00020 | .00010 | .00007 |
| Pocahontas | 1,532 | 2 | 198 | 5.19 | 1.18 | .09 | .91 | .0027 | .02 | .00007 | .00004 | .00003 |
| Southeastern | 6,513 | 3 | 187 | 10.27 | 2.10 | .12 | 2.21 | .0057 | .10 | .00025 | .00013 | .00008 |
| Western Trunk Line | 7,890 | 2 | 133 | 8.56 | 1.70 | .10 | 1.65 | .0044 | .09 | .00022 | .00012 | .00006 |
| Southwestern | 5,064 | 3 | 142 | 10.85 | 2.13 | .12 | 2.41 | .0056 | .12 | .00029 | .00015 | .00008 |
| Pacific Northwest | 1,438 | 2 | 73 | 7.17 | 1.19 | .07 | 1.98 | .0027 | .09 | .00014 | .00007 | .00004 |
| Pacific Southwest | 2,004 | 2 | 111 | 8.26 | 1.32 | .08 | 1.91 | .0029 | .11 | .00017 | .00009 | .00004 |
| CONVEYANCE | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 876,664 | 45% | 3,610 | 164.38 | 35.92 | 2.24 | 32.29 | .0849 | 1.36 | .00372 | .00193 | .00118 |
| New England | 35,726 | 45 | 4,680 | 143.99 | 41.93 | 2.89 | 22.16 | .1033 | 1.38 | .00592 | .00306 | .00167 |
| Trunk Line | 167,737 | 39 | 7,776 | 132.85 | 39.61 | 2.85 | 27.49 | .0892 | 1.03 | .00348 | .00180 | .00120 |
| Central | 183,929 | 40 | 4,795 | 173.33 | 35.51 | 2.13 | 26.87 | .0748 | 1.06 | .00311 | .00161 | .00101 |
| Pocahontas | 47,196 | 51 | 6,093 | 159.88 | 36.23 | 2.77 | 28.10 | .0845 | .69 | .00222 | .00115 | .00094 |
| Southeastern | 103,927 | 49 | 2,981 | 163.90 | 33.55 | 1.94 | 35.28 | .0903 | 1.65 | .00399 | .00207 | .00127 |
| Western Trunk Line | 150,262 | 45 | 2,538 | 162.97 | 32.43 | 1.94 | 31.41 | .0831 | 1.62 | .00429 | .00221 | .00120 |
| Southwestern | 78,985 | 51 | 2,215 | 169.31 | 33.22 | 1.91 | 37.59 | .0875 | 1.83 | .00445 | .00230 | .00123 |
| Pacific Northwest | 48,125 | 58 | 2,427 | 239.96 | 39.98 | 2.49 | 66.27 | .0909 | 2.89 | .00466 | .00241 | .00129 |
| Pacific Southwest | 60,777 | 54 | 3,381 | 250.41 | 39.88 | 2.46 | 57.79 | .0871 | 3.44 | .00518 | .00268 | .00135 |
| SINGLE CARRIER | | | | | | | | | | | | |
| YARDINGS | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 165,664 | 8% | 683 | 31.06 | 6.79 | .42 | 6.10 | .0160 | .26 | .00070 | .00036 | .00022 |
| New England | 5,847 | 7 | 766 | 23.57 | 6.86 | .47 | 3.62 | .0169 | .23 | .00097 | .00050 | .00028 |
| Trunk Line | 43,293 | 10 | 2,005 | 34.25 | 10.22 | .73 | 7.09 | .0230 | .26 | .00090 | .00046 | .00031 |
| Central | 38,660 | 8 | 1,008 | 36.43 | 7.46 | .45 | 5.65 | .0157 | .23 | .00065 | .00034 | .00021 |
| Pocahontas | 9,194 | 10 | 1,187 | 31.14 | 7.06 | .54 | 5.47 | .0165 | .13 | .00043 | .00022 | .00018 |
| Southeastern | 17,339 | 8 | 498 | 27.35 | 5.60 | .32 | 5.88 | .0151 | .28 | .00067 | .00034 | .00021 |
| Western Trunk Line | 26,107 | 8 | 442 | 28.32 | 5.63 | .34 | 5.46 | .0144 | .28 | .00074 | .00038 | .00021 |
| Southwestern | 11,164 | 7 | 313 | 23.93 | 4.70 | .27 | 5.31 | .0124 | .26 | .00063 | .00033 | .00017 |
| Pacific Northwest | 6,576 | 8 | 332 | 32.79 | 5.46 | .34 | 9.06 | .0124 | .39 | .00064 | .00033 | .00018 |
| Pacific Southwest | 7,524 | 7 | 419 | 31.00 | 4.94 | .30 | 7.15 | .0108 | .43 | .00064 | .00033 | .00017 |
| MULTIPLE CARRIER | | | | | | | | | | | | |
| YARDINGS | $ | | $ | $ | $ | $ | $ | $ | $ | $ | $ | $ |
| United States | 144,286 | 7% | 594 | 27.06 | 5.91 | .37 | 5.32 | .0140 | .22 | .00061 | .00032 | .00019 |
| New England | 4,093 | 5 | 536 | 16.50 | 4.80 | .33 | 2.54 | .0118 | .16 | .00068 | .00035 | .00019 |
| Trunk Line | 42,647 | 10 | 1,978 | 33.77 | 10.07 | .72 | 6.99 | .0227 | .26 | .00088 | .00046 | .00030 |
| Central | 44,092 | 9 | 1,149 | 41.55 | 8.51 | .51 | 6.44 | .0179 | .25 | .00075 | .00039 | .00024 |
| Pocahontas | 5,032 | 5 | 650 | 17.05 | 3.86 | .30 | 3.00 | .0090 | .07 | .00024 | .00012 | .00011 |
| Southeastern | 11,769 | 6 | 338 | 18.56 | 3.80 | .22 | 3.99 | .0102 | .19 | .00045 | .00023 | .00014 |
| Western Trunk Line | 19,487 | 6 | 329 | 21.14 | 4.20 | .25 | 4.07 | .0108 | .21 | .00056 | .00029 | .00016 |
| Southwestern | 8,104 | 5 | 227 | 17.37 | 3.41 | .20 | 3.86 | .0090 | .19 | .00046 | .00024 | .00013 |
| Pacific Northwest | 2,575 | 3 | 130 | 12.84 | 2.14 | .13 | 3.55 | .0069 | .15 | .00025 | .00013 | .00007 |
| Pacific Southwest | 6,485 | 6 | 361 | 26.72 | 4.26 | .26 | 6.17 | .0093 | .37 | .00055 | .00029 | .00015 |



SECTION 107. LINE COSTS

Analysis 107.3 Water Line Unit Costs - 1932

| | AGGREGATE (000) | REVE-NUE RATIO | ROUTE MILE | SCHED-ULE | VE-HICLE | NET TON | SCHED-ULE HOUR | SCHED-ULE MILE | VE-HICLE MILE | PER TON MILE GROSS | NET RAIL | NET WATER | EQUA-TED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CARLOT | | | | | | | | | | | | | |
| LINE | | | | | | | | | | | | | |
| United States | $ 83,302 | 81% | $ 187 | $ 765 | - | $4.44 | $29.63 | $ 4.02 | - | - | $.00168 | $.0025 | - |
| Atlantic Coast | 15,708 | 63 | 702 | 1,101 | - | 3.36 | 21.97 | 2.76 | - | - | .0089 | .0079 | - |
| Atlantic Gulf | 11,832 | 89 | 453 | 10,361 | - | 7.18 | 41.79 | 4.17 | - | - | .0044 | .0035 | - |
| Intercoastal | 34,029 | 87 | 386 | 78,408 | - | 8.69 | 42.35 | 5.76 | - | - | .0034 | .0015 | - |
| Inland Waterways | 5,199 | 60 | 544 | 7,631 | - | 2.25 | 23.24 | 6.09 | - | - | .0035 | .0022 | - |
| Great Lakes | 6,675 | 90 | 610 | 529 | - | 2.23 | 28.34 | 3.55 | - | - | .0058 | .0052 | - |
| Pacific Coast | 9,898 | 105 | 702 | 124 | - | 3.82 | 17.93 | 2.81 | - | - | .0096 | .0103 | - |
| STATION | | | | | | | | | | | | | |
| United States | $ 2,385 | 2% | $ 14 | $ 22 | - | $ .13 | $ .85 | $ .12 | - | - | $.0001 | $.0001 | - |
| Atlantic Coast | 351 | 1 | 16 | 25 | - | .08 | .49 | .06 | - | - | .0002 | .0002 | - |
| Atlantic Gulf | 1,002 | 8 | 38 | 877 | - | .44 | 3.54 | .35 | - | - | .0004 | .0003 | - |
| Intercoastal. | 142 | 1 | 5 | 1,066 | - | .12 | .58 | .08 | - | - | .0000 | .0001 | - |
| Inland Waterways | 223 | 3 | 23 | 329 | - | .10 | 1.00 | .26 | - | - | .0002 | .0001 | - |
| Great Lakes | 143 | 2 | 13 | 11 | - | .05 | .61 | .08 | - | - | .0001 | .0001 | - |
| Pacific Coast | 202 | 2 | 14 | 3 | - | .08 | .37 | .06 | - | - | .0002 | .0002 | - |
| CONVEYANCE | | | | | | | | | | | | | |
| United States | $ 80,920 | 79% | $ 473 | $ 743 | - | $4.31 | $28.79 | $ 3.91 | - | - | $.0045 | $.0025 | - |
| Atlantic Coast | 15,357 | 62 | 686 | 1,077 | - | 3.28 | 21.47 | 2.70 | - | - | .0087 | .0077 | - |
| Atlantic Gulf | 10,831 | 81 | 434 | 9,484 | - | 4.74 | 38.25 | 3.82 | - | - | .0040 | .0032 | - |
| Intercoastal | 33,567 | 86 | 381 | 77,342 | - | 8.57 | 41.78 | 5.68 | - | - | .0034 | .0015 | - |
| Inland Waterways | 4,936 | 58 | 520 | 7,302 | - | 2.15 | 22.24 | 5.83 | - | - | .0033 | .0021 | - |
| Great Lakes | 6,532 | 88 | 597 | 517 | - | 2.18 | 27.74 | 3.47 | - | - | .0057 | .0051 | - |
| Pacific Coast | 9,697 | 103 | 688 | 122 | - | 3.74 | 17.57 | 2.76 | - | - | .0094 | .0101 | - |
| CARGO | | | | | | | | | | | | | |
| LINE | | | | | | | | | | | | | |
| United States | $ 19,890 | 116% | $ 214 | $5,023 | - | $ .70 | $27.60 | $ 4.44 | - | - | $.0010 | $.0010 | - |
| Atlantic Coast | 3,885 | 119 | 210 | 7,500 | - | 1.15 | 42.88 | 7.09 | - | - | .0018 | .0018 | - |
| Atlantic Gulf | 989 | 81 | 108 | 26,021 | - | 1.90 | 31.31 | 6.14 | - | - | .0011 | .0010 | - |
| Intercoastal | 833 | 127 | 38 | 14,552 | - | 4.82 | 6.74 | 1.21 | - | - | .0017 | .0008 | - |
| Inland Waterways | 446 | 44 | 108 | 1,937 | - | .76 | 6.57 | 1.81 | - | - | .0013 | .0007 | - |
| Great Lakes | 13,639 | 123 | 276 | 6,257 | - | .57 | 37.85 | 4.74 | - | - | .0009 | .0009 | - |
| Pacific Coast | 658 | 174 | 118 | 679 | - | 4.07 | 4.91 | 1.49 | - | - | .0099 | .0099 | - |
| STATION | | | | | | | | | | | | | |
| United States | $ 133 | 1% | $ 1 | $ 34 | - | $ .00 | $ .18 | $ .03 | - | - | $.0000 | $.0000 | - |
| Atlantic Coast | 80 | 2 | 4 | 155 | - | .02 | .88 | .15 | - | - | .0000 | .0000 | - |
| Atlantic Gulf | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| Intercoastal | 26 | 14 | 4 | 1,602 | - | .53 | .75 | .13 | - | - | .0002 | .0001 | - |
| Inland Waterways | 1 | 0 | 0 | 3 | - | .00 | .01 | .00 | - | - | .0000 | .0000 | - |
| Great Lakes | 26 | 0 | 1 | 12 | - | .00 | .07 | .01 | - | - | .0000 | .0000 | - |
| Pacific Coast | 0 | 0 | 0 | 0 | - | .00 | .00 | .00 | - | - | .0000 | .0000 | - |
| CONVEYANCE | | | | | | | | | | | | | |
| United States | $ 19,716 | 115% | $ 212 | $4,989 | - | $ .69 | $27.42 | $ 4.41 | - | - | $.0010 | $.0010 | - |
| Atlantic Coast | 3,805 | 116 | 206 | 7,345 | - | 1.13 | 42.00 | 6.95 | - | - | .0018 | .0017 | - |
| Atlantic Gulf | 989 | 81 | 108 | 26,021 | - | 1.90 | 31.31 | 6.14 | - | - | .0011 | .0010 | - |
| Intercoastal | 207 | 113 | 34 | 12,950 | - | 4.29 | 5.99 | 1.07 | - | - | .0015 | .0007 | - |
| Inland Waterways | 445 | 44 | 108 | 1,934 | - | .76 | 6.56 | 1.81 | - | - | .0013 | .0007 | - |
| Great Lakes | 13,613 | 123 | 275 | 6,245 | - | .57 | 37.78 | 4.73 | - | - | .0009 | .0009 | - |
| Pacific Coast | 658 | 174 | 118 | 678 | - | 4.07 | 4.91 | 1.49 | - | - | .0099 | .0099 | - |

SECTION 107. LINE COSTS

Analysis 107.4 Pipe Line Unit Costs - 1932

| | AGGREGATE (000) | REVENUE RATIO | ROUTE MILE | NET TON | NET TON MILE |
|---|---|---|---|---|---|
| CONVEYANCE | | | | | |
| United States | $ 67,186 | 32 % | $ 724 | $ .81 | $ .0021 |
| North Atlantic Coast | 3,735 | 40 | 254 | 1.32 | .0035 |
| Great Lakes Southwest | 33,482 | 33 | 748 | 1.33 | .0016 |
| Southwest Gulf | 29,968 | 29 | 901 | .55 | .0032 |



SECTION 107. LINE COSTS

Analysis 107.5 Fixed and Variable Line Costs of Car Lot Trains - 1932

| TYPE OF TRAIN ITEM | COST PER CAR MILE, CENTS | | | | | COST PER NET TON MILE, MILLS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ALL | MANIFEST | DRAG | WAY | BRANCH | ALL | MANIFEST | DRAG | WAY | BRANCH |
| LINE COSTS | 11.68 | 9.07 | 12.72 | 20.24 | 26.56 | 5.0 | 4.6 | 4.6 | 8.2 | 10.7 |
| FIXED EXPENSE | 4.70 | 3.42 | 5.45 | 8.60 | 10.92 | 2.0 | 1.9 | 1.9 | 3.6 | 4.4 |
| Road | 4.70 | 3.42 | 5.45 | 8.60 | 10.92 | 2.0 | 1.9 | 1.9 | 3.6 | 4.4 |
| Overhead | 1.70 | 1.19 | 1.90 | 3.38 | 4.62 | .7 | .6 | .6 | 1.3 | 1.9 |
| Roadway | 1.80 | 1.42 | 2.32 | 2.63 | 2.61 | .8 | .8 | .8 | 1.1 | 1.0 |
| Cars | .28 | .23 | .29 | .45 | .48 | .1 | .1 | .1 | .3 | .2 |
| Dispatching, etc | .28 | .17 | .28 | .71 | 1.12 | .1 | .1 | .1 | .3 | .4 |
| Train Supplies | .03 | .02 | .03 | .04 | .05 | - | - | - | - | - |
| Station | .17 | .10 | .16 | .44 | .66 | .1 | .1 | .1 | .2 | .3 |
| Supervision | .44 | .29 | .47 | .95 | 1.38 | .2 | .2 | .2 | .4 | .6 |
| Power | .14 | .11 | .18 | .20 | .20 | .1 | .1 | .1 | .1 | .1 |
| Transportation | .30 | .18 | .29 | .75 | 1.18 | .1 | .1 | .1 | .3 | .5 |
| VARIABLE EXPENSE | 6.98 | 5.65 | 7.27 | 11.64 | 15.64 | 3.0 | 2.7 | 2.7 | 4.6 | 6.3 |
| Road | 3.98 | 2.65 | 4.27 | 8.64 | 12.64 | 1.7 | 1.4 | 1.4 | 3.3 | 5.0 |
| Power | 2.51 | 1.77 | 2.82 | 4.91 | 6.74 | 1.1 | .9 | .9 | 1.8 | 2.7 |
| Maintenance | 1.27 | 1.02 | 1.60 | 1.77 | 1.78 | .5 | .5 | .5 | .6 | .7 |
| Fuel and Care | 1.24 | .75 | 1.22 | 3.14 | 4.96 | .6 | .4 | .4 | 1.2 | 2.0 |
| Wages (crew) | 1.47 | .88 | 1.45 | 3.73 | 5.90 | .6 | .5 | .5 | 1.5 | 2.3 |
| Yardings | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |

SECTION 107. LINE COSTS

Analysis 107.6 Functional Distribution of Road Service Unit Cost Per Net Ton Mile - 1932

| | ALL EXPENSES AND TAXES | ADMINIS-TRATION | TAXES | ROADWAY | POWER | CAR | TRAIN | STATION |
|---|---|---|---|---|---|---|---|---|
| **ALL TRAINS** | | | | | | | | |
| United States | $.0038 | $.0004 | $.0004 | $.0008 | $.0006 | $.0001 | $.0015 | $.0001 |
| New England | .0061 | .0006 | .0006 | .0014 | .0009 | .0001 | .0024 | .0002 |
| Trunk Line | .0036 | .0003 | .0004 | .0006 | .0006 | .0001 | .0014 | .0001 |
| Central | .0032 | .0003 | .0003 | .0007 | .0005 | .0001 | .0012 | .0001 |
| Pocahontas | .0022 | .0002 | .0002 | .0005 | .0004 | .0001 | .0008 | * |
| Southeastern | .0041 | .0004 | .0004 | .0010 | .0007 | .0001 | .0015 | .0001 |
| Western Trunk Line | .0044 | .0004 | .0004 | .0009 | .0007 | .0001 | .0017 | .0001 |
| Southwestern | .0046 | .0004 | .0005 | .0011 | * | .0002 | .0017 | .0001 |
| Pacific Northwest | .0047 | .0004 | .0005 | .0010 | .0008 | .0001 | .0018 | .0001 |
| Pacific Southwest | .0053 | .0005 | .0005 | .0010 | .0008 | .0002 | .0022 | .0001 |
| **TOTAL - MAIN** | | | | | | | | |
| United States | $.0036 | $.0003 | $.0004 | $.0008 | $.0006 | $.0001 | $.0013 | $.0001 |
| New England | .0056 | .0005 | .0006 | .0014 | .0009 | .0001 | .0020 | .0001 |
| Trunk Line | .0034 | .0003 | .0003 | .0006 | .0006 | .0001 | .0013 | .0001 |
| Central | .0031 | .0003 | .0003 | .0007 | .0005 | .0001 | .0012 | .0001 |
| Pocahontas | .0023 | .0002 | .0002 | .0005 | .0004 | .0001 | .0007 | * |
| Southeastern | .0039 | .0004 | .0004 | .0010 | .0007 | .0001 | .0013 | .0001 |
| Western Trunk Line | .0041 | .0004 | .0004 | .0009 | .0007 | .0001 | .0015 | .0001 |
| Southwestern | .0043 | .0004 | .0004 | .0011 | .0007 | .0002 | .0015 | .0001 |
| Pacific Northwest | .0043 | .0004 | .0004 | .0010 | .0008 | .0001 | .0015 | .0001 |
| Pacific Southwest | .0050 | .0005 | .0005 | .0010 | .0008 | .0002 | .0019 | .0001 |
| **TOTAL - THROUGH ∮** | | | | | | | | |
| United States | $.0033 | $.0004 | $.0005 | $.0009 | $.0004 | $.0001 | $.0009 | $.0001 |
| New England | .0048 | .0004 | .0004 | .0013 | .0009 | .0001 | .0016 | .0001 |
| Trunk Line | .0032 | .0003 | .0003 | .0006 | .0006 | .0002 | .0011 | .0001 |
| Central | .0029 | .0003 | .0003 | .0007 | .0005 | .0002 | .0008 | .0001 |
| Pocahontas | .0021 | .0002 | .0003 | .0005 | .0004 | .0001 | .0006 | - |
| Southeastern | .0034 | .0003 | .0003 | .0009 | .0007 | .0001 | .0010 | .0001 |
| Western Trunk Line | .0036 | .0003 | .0004 | .0009 | .0006 | .0001 | .0012 | .0001 |
| Southwestern | .0038 | .0004 | .0004 | .0010 | .0006 | .0001 | .0012 | .0001 |
| Pacific Northwest | .0042 | .0003 | .0006 | .0010 | .0008 | .0001 | .0013 | .0001 |
| Pacific Southwest | .0046 | .0004 | .0006 | .0009 | .0008 | .0002 | .0016 | .0001 |
| **MAIN LINE WAY** | | | | | | | | |
| United States | $.0069 | $.0006 | $.0007 | $.0011 | $.0008 | $.0002 | $.0034 | $.0002 |
| New England | .0125 | .0012 | .0013 | .0018 | .0011 | .0002 | .0065 | .0004 |
| Trunk Line | .0057 | .0005 | .0006 | .0003 | .0008 | .0001 | .0011 | .0001 |
| Central | .0058 | .0005 | .0006 | .0008 | .0006 | .0002 | .0030 | .0001 |
| Pocahontas | .0051 | .0005 | .0005 | .0008 | .0006 | .0001 | .0026 | .0001 |
| Southeastern | .0074 | .0007 | .0008 | .0013 | .0008 | .0002 | .0034 | .0002 |
| Western Trunk Line | .0083 | .0008 | .0008 | .0014 | .0010 | .0002 | .0039 | .0002 |
| Southwestern | .0082 | .0008 | .0008 | .0016 | .0009 | .0001 | .0011 | .0001 |
| Pacific Northwest | .0074 | .0007 | .0008 | .0013 | .0008 | .0002 | .0035 | .0001 |
| Pacific Southwest | .0100 | .0009 | .0010 | .0014 | .0010 | .0003 | .0051 | .0002 |
| **BRANCH WAY** | | | | | | | | |
| United States | $.0094 | $.0009 | $.0010 | $.0010 | $.0008 | $.0002 | $.0052 | $.0003 |
| New England | .0197 | .0019 | .0020 | .0018 | .0010 | .0002 | .0121 | .0007 |
| Trunk Line | .0076 | .0007 | .0008 | .0006 | .0007 | .0001 | .0044 | .0002 |
| Central | .0075 | .0007 | .0008 | .0007 | .0006 | .0002 | .0043 | .0002 |
| Pocahontas | .0064 | .0006 | .0007 | .0007 | .0005 | .0001 | .0037 | .0001 |
| Southeastern | .0036 | .0003 | .0004 | .0005 | .0003 | .0001 | .0019 | .0001 |
| Western Trunk Line | .0102 | .0010 | .0010 | .0012 | .0009 | .0002 | .0055 | .0003 |
| Southwestern | .0094 | .0009 | .0010 | .0012 | .0008 | .0002 | .0049 | .0003 |
| Pacific Northwest | .0117 | .0011 | .0012 | .0015 | .0009 | .0002 | .0066 | .0003 |
| Pacific Southwest | .0141 | .0013 | .0014 | .0011 | .0011 | .0006 | .0082 | .0003 |

* Less than .00005.
∮ Manifest and Drag.



SECTION 107. LINE COSTS

Analysis 107.7 Functional Distribution of Unit Cost of Road Service per Loaded Car Miles - 1932

| | ALL EXPENSES AND TAXES | ADMINIS-TRATION | TAXES | ROADWAY | POWER | CAR | TRAIN | STATION |
|---|---|---|---|---|---|---|---|---|
| **ALL TRAINS** | | | | | | | | |
| United States | $.0869 | $.0082 | $.0089 | $.0182 | $.0141 | $.0028 | $.0332 | $.0012 |
| New England | .1067 | .0100 | .0109 | .0242 | .0154 | .0023 | .0411 | .0028 |
| Trunk Line | .0917 | .0086 | .0094 | .0159 | .0165 | .0025 | .0368 | .0020 |
| Central | .0765 | .0072 | .0078 | .0159 | .0123 | .0030 | .0289 | .0014 |
| Pocahontas | .0856 | .0081 | .0088 | .0195 | .0162 | .0023 | .0298 | .0009 |
| Southeastern | .0925 | .0087 | .0095 | .0220 | .0149 | .0023 | .0334 | .0017 |
| Western Trunk Line | .0851 | .0080 | .0087 | .0183 | .0129 | .0029 | .0329 | .0016 |
| Southwestern | .0904 | .0085 | .0092 | .0211 | .0134 | .0032 | .0328 | .0023 |
| Pacific Northwest | .0926 | .0087 | .0094 | .0201 | .0150 | .0027 | .0354 | .0013 |
| Pacific Southwest | .0888 | .0083 | .0090 | .0165 | .0141 | .0033 | .0362 | .0013 |
| **TOTAL - MAIN LINE** | | | | | | | | |
| United States | $.0817 | $.0077 | $.0083 | $.0179 | $.0139 | $.0027 | $.0297 | $.0015 |
| New England | .0979 | .0092 | .0100 | .0239 | .0153 | .0022 | .0348 | .0024 |
| Trunk Line | .0855 | .0080 | .0087 | .0157 | .0162 | .0024 | .0326 | .0018 |
| Central | .0747 | .0070 | .0076 | .0159 | .0123 | .0030 | .0277 | .0013 |
| Pocahontas | .0794 | .0075 | .0081 | .0191 | .0161 | .0023 | .0255 | .0008 |
| Southeastern | .0872 | .0082 | .0089 | .0216 | .0147 | .0023 | .0300 | .0016 |
| Western Trunk Line | .0792 | .0074 | .0080 | .0179 | .0126 | .0028 | .0289 | .0014 |
| Southwestern | .0837 | .0078 | .0085 | .0207 | .0132 | .0030 | .0284 | .0020 |
| Pacific Northwest | .0830 | .0078 | .0084 | .0193 | .0142 | .0026 | .0292 | .0010 |
| Pacific Southwest | .0838 | .0079 | .0085 | .0164 | .0140 | .0031 | .0327 | .0012 |
| **TOTAL - MANIFEST AND DRAG** | | | | | | | | |
| United States | $.0737 | $.0068 | $.0082 | $.0170 | $.0133 | $.0032 | $.0240 | $.0012 |
| New England | .0837 | .0067 | .0073 | .0231 | .0149 | .0022 | .0275 | .0020 |
| Trunk Line | .0773 | .0067 | .0076 | .0152 | .0155 | .0042 | .0266 | .0015 |
| Central | .0688 | .0063 | .0076 | .0154 | .0119 | .0037 | .0228 | .0011 |
| Pocahontas | .0764 | .0069 | .0115 | .0185 | .0157 | .0021 | .0210 | .0007 |
| Southeastern | .0774 | .0077 | .0078 | .0205 | .0140 | .0029 | .0234 | .0011 |
| Western Trunk Line | .0697 | .0062 | .0077 | .0168 | .0115 | .0027 | .0234 | .0011 |
| Southwestern | .0742 | .0082 | .0083 | .0190 | .0124 | .0028 | .0219 | .0016 |
| Pacific Northwest | .0774 | .0069 | .0105 | .0180 | .0142 | .0028 | .0242 | .0008 |
| Pacific Southwest | .0760 | .0069 | .0099 | .0152 | .0135 | .0028 | .0267 | .0010 |
| **MAIN LINE WAY** | | | | | | | | |
| United States | $.1725 | $.0162 | $.0176 | $.0263 | $.0197 | $.0045 | $.0837 | $.0044 |
| New England | .2210 | .0209 | .0226 | .0325 | .0199 | .0030 | .1146 | .0076 |
| Trunk Line | .1601 | .0151 | .0163 | .0194 | .0213 | .0040 | .0795 | .0045 |
| Central | .1574 | .0148 | .0160 | .0206 | .0167 | .0049 | .0807 | .0037 |
| Pocahontas | .1871 | .0177 | .0192 | .0273 | .0229 | .0040 | .0932 | .0029 |
| Southeastern | .1721 | .0162 | .0176 | .0300 | .0195 | .0038 | .0802 | .0047 |
| Western Trunk Line | .1782 | .0167 | .0182 | .0302 | .0207 | .0044 | .0834 | .0046 |
| Southwestern | .1735 | .0162 | .0176 | .0335 | .0191 | .0052 | .0766 | .0053 |
| Pacific Northwest | .1776 | .0167 | .0181 | .0321 | .0199 | .0045 | .0831 | .0032 |
| Pacific Southwest | .2358 | .0221 | .0239 | .0339 | .0227 | .0077 | .1207 | .0048 |
| **BRANCH LINE WAY** | | | | | | | | |
| United States | $.2356 | $.0222 | $.0241 | $.0261 | $.0198 | $.0048 | $.1321 | $.0066 |
| New England | .3499 | .0331 | .0359 | .0328 | .0176 | .0035 | .2150 | .0120 |
| Trunk Line | .2702 | .0255 | .0277 | .0220 | .0266 | .0043 | .1559 | .0082 |
| Central | .2273 | .0214 | .0232 | .0215 | .0172 | .0058 | .1324 | .0058 |
| Pocahontas | .2883 | .0274 | .0298 | .0332 | .0212 | .0046 | .1678 | .0042 |
| Southeastern | .2447 | .0230 | .0250 | .0345 | .0209 | .0041 | .1300 | .0072 |
| Western Trunk Line | .1969 | .0186 | .0201 | .0241 | .0173 | .0040 | .1074 | .0054 |
| Southwestern | .2009 | .0189 | .0205 | .0265 | .0174 | .0051 | .1055 | .0070 |
| Pacific Northwest | .2787 | .0263 | .0285 | .0359 | .0207 | .0040 | .1573 | .0061 |
| Pacific Southwest | .2220 | .0207 | .0225 | .0176 | .0170 | .0091 | .1300 | .0051 |

SECTION 108. UTILIZATION

Analysis 108.1 Rail Freight Train Performance

| | UNITS PER TRAIN HOURS | | | | | | UNITS PER TRAIN MILE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TRAIN MILES | LOADED CAR MILES | TON MILES NET | TON MILES EQUATED | TON MILES CAR | TON MILES GROSS | LOADED CAR MILES | TON MILES NET | TON MILES EQUATED | TON MILES CAR | TON MILES GROSS |
| UNITED STATES | 16 | 423 | 97 | 188 | 266 | 308 | 26 | 605 | 1,166 | 17 | 19 |
| NEW ENGLAND | 15 | 406 | 71 | 137 | 214 | 251 | 28 | 488 | 944 | 15 | 17 |
| Connecticut | 16 | 537 | 92 | 178 | 280 | 327 | 34 | 584 | 1,130 | 18 | 21 |
| Maine | 15 | 327 | 62 | 120 | 185 | 217 | 22 | 444 | 801 | 12 | 14 |
| Massachusetts | 14 | 367 | 64 | 124 | 195 | 229 | 27 | 470 | 909 | 14 | 17 |
| New Hampshire | 14 | 433 | 80 | 155 | 230 | 266 | 32 | 585 | 1,132 | 17 | 20 |
| Rhode Island | 16 | 544 | 88 | 170 | 287 | 334 | 35 | 563 | 1,089 | 18 | 21 |
| Vermont | 13 | 366 | 54 | 104 | 162 | 193 | 28 | 413 | 799 | 12 | 15 |
| TRUNK LINE | 14 | 444 | 114 | 221 | 289 | 330 | 32 | 817 | 1,580 | 20 | 24 |
| Delaware | 13 | 321 | 58 | 112 | 190 | 215 | 25 | 452 | 874 | 15 | 17 |
| Maryland | 13 | 405 | 105 | 203 | 269 | 305 | 31 | 810 | 1,567 | 20 | 23 |
| New Jersey | 14 | 364 | 104 | 201 | 248 | 283 | 26 | 733 | 1,418 | 17 | 20 |
| New York | 15 | 526 | 115 | 222 | 323 | 370 | 34 | 748 | 1,435 | 21 | 24 |
| Pennsylvania | 13 | 444 | 117 | 226 | 285 | 329 | 32 | 832 | 1,725 | 21 | 24 |
| CENTRAL | 17 | 475 | 114 | 221 | 308 | 351 | 29 | 686 | 1,327 | 18 | 21 |
| Illinois | 17 | 453 | 102 | 197 | 288 | 328 | 26 | 585 | 1,132 | 17 | 19 |
| Indiana | 18 | 533 | 116 | 224 | 337 | 383 | 30 | 646 | 1,250 | 19 | 21 |
| Michigan | 17 | 410 | 84 | 162 | 251 | 291 | 24 | 496 | 959 | 15 | 17 |
| Ohio | 16 | 495 | 133 | 257 | 331 | 377 | 32 | 851 | 1,646 | 21 | 24 |
| POCAHONTAS | 13 | 489 | 164 | 317 | 342 | 384 | 33 | 1,851 | 2,120 | 26 | 29 |
| Virginia | 16 | 509 | 185 | 358 | 396 | 444 | 32 | 1,164 | 2,251 | 25 | 28 |
| West Virginia | 11 | 367 | 147 | 284 | 301 | 337 | 34 | 1,351 | 2,613 | 28 | 31 |
| SOUTHEASTERN | 17 | 372 | 84 | 162 | 227 | 264 | 21 | 481 | 936 | 13 | 15 |
| Alabama | 18 | 351 | 73 | 141 | 204 | 242 | 20 | 413 | 799 | 12 | 14 |
| Florida | 18 | 211 | 49 | 95 | 166 | 204 | 12 | 269 | 520 | 9 | 11 |
| Georgia | 18 | 364 | 64 | 124 | 212 | 249 | 20 | 351 | 679 | 12 | 14 |
| Kentucky | 18 | 476 | 153 | 296 | 341 | 382 | 27 | 862 | 1,667 | 19 | 21 |
| Mississippi | 15 | 348 | 68 | 132 | 196 | 222 | 23 | 440 | 851 | 13 | 14 |
| North Carolina | 17 | 406 | 71 | 137 | 212 | 251 | 23 | 408 | 789 | 12 | 14 |
| South Carolina | 17 | 309 | 62 | 120 | 173 | 207 | 19 | 372 | 720 | 10 | 13 |
| Tennessee | 16 | 334 | 75 | 145 | 197 | 232 | 21 | 465 | 899 | 12 | 14 |
| WESTERN TRUNK LINE | 17 | 390 | 76 | 147 | 233 | 271 | 23 | 453 | 876 | 14 | 16 |
| Iowa | 18 | 385 | 72 | 139 | 232 | 273 | 21 | 400 | 774 | 13 | 15 |
| Kansas | 18 | 432 | 86 | 166 | 262 | 302 | 24 | 487 | 942 | 15 | 17 |
| Minnesota | 15 | 341 | 76 | 147 | 209 | 241 | 22 | 499 | 965 | 14 | 16 |
| Missouri | 18 | 454 | 87 | 168 | 271 | 312 | 25 | 484 | 936 | 15 | 17 |
| Nebraska | 17 | 428 | 76 | 147 | 253 | 295 | 25 | 449 | 868 | 15 | 18 |
| North Dakota | 16 | 335 | 68 | 132 | 192 | 225 | 21 | 419 | 810 | 12 | 14 |
| South Dakota | 15 | 261 | 53 | 103 | 158 | 188 | 18 | 342 | 700 | 11 | 13 |
| Wisconsin | 14 | 354 | 67 | 130 | 205 | 236 | 25 | 471 | 911 | 14 | 16 |
| SOUTHWESTERN | 17 | 380 | 75 | 145 | 233 | 270 | 22 | 430 | 832 | 13 | 16 |
| Arkansas | 18 | 424 | 86 | 166 | 249 | 278 | 24 | 479 | 927 | 14 | 16 |
| Louisiana | 17 | 329 | 74 | 143 | 203 | 230 | 20 | 444 | 859 | 12 | 14 |
| New Mexico | 19 | 536 | 98 | 190 | 340 | 397 | 28 | 512 | 990 | 18 | 21 |
| Oklahoma | 16 | 312 | 66 | 128 | 199 | 234 | 20 | 420 | 812 | 13 | 15 |
| Texas | 18 | 381 | 71 | 137 | 232 | 272 | 22 | 402 | 778 | 13 | 15 |
| PACIFIC NORTHWEST | 16 | 440 | 86 | 166 | 264 | 310 | 27 | 533 | 1,031 | 16 | 19 |
| Idaho | 16 | 397 | 80 | 155 | 239 | 283 | 25 | 497 | 961 | 15 | 18 |
| Montana | 16 | 529 | 106 | 205 | 317 | 370 | 33 | 652 | 1,261 | 20 | 23 |
| Oregon | 15 | 299 | 61 | 118 | 171 | 206 | 20 | 400 | 774 | 11 | 14 |
| Washington | 14 | 277 | 62 | 120 | 172 | 208 | 20 | 442 | 855 | 12 | 15 |
| Wyoming | 21 | 768 | 127 | 246 | 456 | 524 | 37 | 619 | 1,197 | 22 | 26 |
| PACIFIC SOUTHWEST | 16 | 458 | 77 | 149 | 252 | 296 | 28 | 476 | 921 | 16 | 18 |
| Arizona | 18 | 589 | 100 | 195 | 380 | 437 | 32 | 548 | 1,060 | 21 | 24 |
| California | 15 | 389 | 73 | 141 | 234 | 280 | 25 | 481 | 930 | 15 | 18 |
| Colorado | 16 | 364 | 45 | 85 | 131 | 155 | 25 | 273 | 528 | 7 | 10 |
| Nevada | 19 | 795 | 15 | 29 | 458 | 541 | 42 | 777 | 1,503 | 25 | 28 |
| Utah | 17 | 505 | 9 | 17 | 289 | 348 | 30 | 540 | 1,046 | 17 | 21 |



SECTION 108. UTILIZATION

Analysis 108.2 Rail Through Train Performance - 1932

| | TRAIN MILES PER TRAIN HOUR | MANIFEST UNITS PER TRAIN MILE LOADED CARS | MANIFEST TON MILES NET | MANIFEST TON MILES EQUATED | MANIFEST TON MILES CAR | MANIFEST TON MILES GROSS | TRAIN MILES PER TRAIN HOUR | DRAG UNITS PER TRAIN MILE LOADED CARS | DRAG TON MILES NET | DRAG TON MILES EQUATED | DRAG TON MILES CAR | DRAG TON MILES GROSS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPERATING DISTRICT | | | | | | | | | | | | |
| UNITED STATES | 21 | 40 | 752 | 1,455 | 2,133 | 2,414 | 17 | 26 | 794 | 1,536 | 2,101 | 2,372 |
| NEW ENGLAND | 21 | 48 | 734 | 1,381 | 2,037 | 2,353 | 16 | 32 | 636 | 1,220 | 1,996 | 2,232 |
| Connecticut | 22 | 52 | 747 | 1,445 | 2,134 | 2,424 | 17 | 32 | 669 | 1,282 | 2,115 | 2,414 |
| Maine | 19 | 37 | 667 | 1,290 | 1,850 | 1,985 | 15 | 33 | 682 | 1,319 | 2,029 | 2,321 |
| Massachusetts | 20 | 47 | 734 | 1,381 | 2,122 | 2,454 | 15 | 31 | 601 | 1,162 | 1,885 | 2,162 |
| New Hampshire | 21 | 60 | 975 | 1,836 | 2,649 | 2,948 | 16 | 37 | 744 | 1,439 | 2,219 | 2,561 |
| Rhode Island | 24 | 50 | 641 | 1,240 | 1,853 | 2,180 | 16 | 35 | 753 | 1,457 | 2,727 | 3,075 |
| Vermont | 18 | 47 | 660 | 1,277 | 1,732 | 2,049 | 17 | 29 | 463 | 896 | 1,473 | 1,718 |
| TRUNK LINE | 21 | 49 | 1,052 | 2,035 | 2,647 | 2,983 | 15 | 26 | 943 | 1,824 | 2,456 | 2,775 |
| Delaware | 22 | 50 | 881 | 1,704 | 2,821 | 3,042 | 18 | 9 | 197 | 381 | 1,174 | 1,380 |
| Maryland | 18 | 40 | 933 | 1,805 | 2,332 | 2,658 | 14 | 28 | 1,338 | 2,588 | 3,284 | 3,692 |
| New Jersey | 21 | 35 | 888 | 1,718 | 2,206 | 2,467 | 14 | 34 | 1,186 | 2,874 | 3,118 | 3,378 |
| New York | 22 | 58 | 1,048 | 2,027 | 2,324 | 3,187 | 18 | 26 | 744 | 1,439 | 2,285 | 2,596 |
| Pennsylvania | 20 | 48 | 1,100 | 2,128 | 2,652 | 2,986 | 13 | 25 | 1,076 | 2,081 | 2,513 | 2,871 |
| CENTRAL | 22 | 39 | 703 | 1,360 | 2,015 | 2,326 | 17 | 27 | 942 | 1,820 | 2,327 | 2,597 |
| Illinois | 23 | 35 | 624 | 1,207 | 1,831 | 2,089 | 16 | 24 | 742 | 1,435 | 1,990 | 2,220 |
| Indiana | 24 | 45 | 777 | 1,503 | 2,306 | 2,590 | 18 | 24 | 729 | 1,410 | 2,056 | 2,318 |
| Michigan | 21 | 33 | 646 | 1,250 | 1,857 | 2,122 | 18 | 24 | 533 | 1,031 | 1,825 | 2,078 |
| Ohio | 22 | 41 | 778 | 1,505 | 2,212 | 2,552 | 16 | 31 | 1,352 | 2,122 | 2,784 | 3,091 |
| POCAHONTAS | 20 | 44 | 1,139 | 2,203 | 2,690 | 3,021 | 15 | 38 | 1,793 | 3,468 | 3,549 | 3,910 |
| Virginia | 21 | 45 | 1,375 | 2,660 | 3,095 | 3,429 | 18 | 35 | 1,471 | 2,845 | 2,972 | 3,311 |
| West Virginia | 19 | 43 | 884 | 1,710 | 2,255 | 2,581 | 12 | 43 | 2,244 | 4,341 | 4,359 | 4,751 |
| SOUTHEASTERN | 21 | 32 | 568 | 1,099 | 1,680 | 1,913 | 19 | 25 | 664 | 1,284 | 1,678 | 1,911 |
| Alabama | 22 | 31 | 562 | 1,087 | 1,658 | 1,923 | 20 | 23 | 497 | 961 | 1,374 | 1,599 |
| Florida | 23 | 21 | 550 | 1,064 | 1,742 | 1,969 | 23 | 13 | 250 | 484 | 899 | 1,103 |
| Georgia | 22 | 34 | 547 | 1,058 | 1,739 | 1,958 | 20 | 20 | 369 | 714 | 1,301 | 1,515 |
| Kentucky | 23 | 32 | 692 | 1,222 | 1,812 | 2,126 | 20 | 31 | 1,111 | 2,155 | 2,360 | 2,600 |
| Mississippi | 20 | 35 | 621 | 1,201 | 1,766 | 1,933 | 18 | 19 | 448 | 867 | 1,399 | 1,590 |
| North Carolina | 21 | 35 | 536 | 1,037 | 1,628 | 1,874 | 18 | 28 | 527 | 1,019 | 1,522 | 1,778 |
| South Carolina | 18 | 21 | 474 | 917 | 1,492 | 1,536 | 19 | 24 | 487 | 942 | 1,351 | 1,607 |
| Tennessee | 20 | 30 | 553 | 1,070 | 1,487 | 1,724 | 18 | 24 | 566 | 1,095 | 1,464 | 1,700 |
| WESTERN TRUNK LINE | 21 | 37 | 666 | 1,288 | 1,967 | 2,212 | 17 | 23 | 515 | 996 | 1,719 | 1,954 |
| Iowa | 22 | 30 | 523 | 1,012 | 1,600 | 1,875 | 18 | 20 | 452 | 874 | 1,598 | 1,805 |
| Kansas | 22 | 39 | 728 | 1,408 | 2,136 | 2,418 | 19 | 19 | 465 | 899 | 1,679 | 1,937 |
| Minnesota | 19 | 39 | 777 | 1,503 | 2,094 | 2,353 | 16 | 27 | 738 | 1,427 | 2,015 | 2,290 |
| Missouri | 23 | 36 | 627 | 1,213 | 1,938 | 2,185 | 19 | 26 | 618 | 1,195 | 1,952 | 2,214 |
| Nebraska | 21 | 46 | 789 | 1,526 | 2,345 | 2,674 | 17 | 16 | 305 | 590 | 1,552 | 1,801 |
| North Dakota | 19 | 45 | 863 | 1,669 | 2,211 | 2,478 | 18 | 21 | 536 | 1,037 | 1,717 | 1,944 |
| South Dakota | 20 | 33 | 633 | 1,221 | 1,732 | 2,032 | 17 | 21 | 513 | 992 | 1,478 | 1,668 |
| Wisconsin | 18 | 39 | 709 | 1,371 | 2,063 | 2,332 | 16 | 29 | 585 | 1,128 | 1,774 | 1,994 |
| SOUTHWESTERN | 22 | 33 | 621 | 1,201 | 1,887 | 2,138 | 19 | 22 | 490 | 948 | 1,657 | 1,899 |
| Arkansas | 24 | 33 | 661 | 1,279 | 1,829 | 2,050 | 18 | 19 | 439 | 849 | 1,641 | 1,833 |
| Louisiana | 22 | 28 | 605 | 1,170 | 1,699 | 1,873 | 19 | 27 | 664 | 1,284 | 1,685 | 1,905 |
| New Mexico | 21 | 43 | 725 | 1,402 | 2,119 | 2,748 | 18 | 12 | 297 | 574 | 1,706 | 2,008 |
| Oklahoma | 22 | 30 | 600 | 1,161 | 1,784 | 2,038 | 19 | 27 | 580 | 1,122 | 1,751 | 1,994 |
| Texas | 21 | 33 | 593 | 1,147 | 1,862 | 2,132 | 19 | 20 | 412 | 797 | 1,566 | 1,814 |
| PACIFIC NORTHWEST | 19 | 49 | 870 | 1,683 | 2,468 | 2,848 | 18 | 18 | 447 | 865 | 1,832 | 2,152 |
| Idaho | 20 | 46 | 857 | 1,658 | 2,362 | 2,800 | 17 | 11 | 471 | 911 | 2,189 | 2,595 |
| Montana | 19 | 57 | 1,043 | 2,017 | 2,842 | 3,226 | 18 | 26 | 568 | 1,099 | 2,133 | 2,495 |
| Oregon | 18 | 39 | 765 | 1,480 | 2,043 | 2,427 | 14 | 16 | 412 | 797 | 1,678 | 1,933 |
| Washington | 16 | 39 | 767 | 1,481 | 2,050 | 2,362 | 16 | 18 | 492 | 952 | 1,483 | 1,769 |
| Wyoming | 23 | 56 | 848 | 1,640 | 2,668 | 3,051 | 20 | 11 | 295 | 571 | 1,800 | 2,092 |
| PACIFIC SOUTHWEST | 20 | 44 | 705 | 1,364 | 2,118 | 2,436 | 17 | 12 | 230 | 445 | 1,191 | 1,764 |
| Arizona | 21 | 43 | 718 | 1,389 | 2,464 | 2,793 | 20 | 8 | 146 | 282 | 1,890 | 2,204 |
| California | 19 | 41 | 742 | 1,435 | 2,213 | 2,559 | 16 | 12 | 281 | 544 | 1,721 | 2,051 |
| Colorado | 21 | 38 | 385 | 745 | 1,127 | 1,314 | 16 | 15 | 169 | 327 | 729 | 898 |
| Nevada | 20 | 64 | 1,150 | 2,224 | 3,179 | 3,498 | 19 | 8 | 198 | 383 | 2,149 | 2,456 |
| Utah | 21 | 43 | 685 | 1,325 | 2,134 | 2,576 | 15 | 12 | 480 | 928 | 1,706 | 2,063 |

SECTION 108. UTILIZATION

Analysis 108.3 Train Operated - 1932

| | TOTAL | MANIFEST | DRAG | WAY | TOTAL MAIN LINE | BRANCH LINE WAY |
|---|---|---|---|---|---|---|
| UNITED STATES | 5,332,999 | 1,341,731 | 1,307,706 | 1,145,930 | 4,095,367 | 1,237,632 |
| NEW ENGLAND | 248,105 | 40,182 | 61,060 | 77,648 | 179,190 | 68,915 |
| Connecticut | 65,229 | 15,596 | 20,593 | 21,217 | 57,406 | 7,823 |
| Maine | 58,048 | 4,018 | 10,035 | 13,001 | 27,054 | 30,994 |
| Massachusetts | 87,143 | 11,574 | 18,356 | 32,199 | 62,131 | 25,312 |
| New Hampshire | 8,133 | 661 | 2,037 | 2,108 | 4,806 | 3,327 |
| Rhode Island | 12,134 | 3,125 | 4,788 | 3,115 | 11,328 | 806 |
| Vermont | 17,118 | 5,208 | 5,249 | 6,008 | 16,465 | 653 |
| TRUNK LINE | 1,262,709 | 275,251 | 272,161 | 379,109 | 926,821 | 335,888 |
| Delaware | 9,762 | 2,352 | 766 | 3,475 | 6,593 | 3,169 |
| Maryland | 50,226 | 23,873 | 6,258 | 12,565 | 42,696 | 7,530 |
| New Jersey | 117,918 | 39,019 | 20,551 | 46,278 | 105,848 | 12,070 |
| New York | 362,397 | 72,390 | 107,102 | 131,760 | 311,252 | 51,145 |
| Pennsylvania | 722,406 | 137,617 | 137,784 | 185,031 | 460,432 | 261,974 |
| CENTRAL | 1,061,147 | 322,690 | 335,882 | 301,995 | 960,567 | 100,580 |
| Illinois | 346,146 | 115,091 | 117,466 | 74,296 | 306,853 | 39,293 |
| Indiana | 139,651 | 38,236 | 53,727 | 41,217 | 133,180 | 6,471 |
| Michigan | 151,815 | 53,446 | 26,380 | 47,637 | 127,463 | 24,352 |
| Ohio | 423,235 | 115,917 | 138,309 | 138,845 | 393,071 | 30,164 |
| POCAHONTAS | 295,205 | 51,951 | 113,494 | 59,677 | 225,122 | 70,083 |
| Virginia | 124,221 | 23,259 | 55,898 | 19,904 | 99,001 | 25,220 |
| West Virginia | 170,984 | 28,692 | 57,656 | 39,773 | 126,121 | 44,863 |
| SOUTHEASTERN | 634,077 | 109,764 | 218,054 | 171,481 | 499,299 | 134,778 |
| Alabama | 90,647 | 11,803 | 31,823 | 30,038 | 73,664 | 16,983 |
| Florida | 59,931 | 5,523 | 7,735 | 16,920 | 30,198 | 29,733 |
| Georgia | 96,863 | 17,179 | 28,158 | 22,675 | 68,012 | 28,851 |
| Kentucky | 130,161 | 16,564 | 71,268 | 25,852 | 113,684 | 16,477 |
| Mississippi | 64,842 | 23,310 | 8,218 | 21,413 | 52,971 | 11,871 |
| North Carolina | 94,461 | 17,945 | 31,304 | 28,270 | 77,519 | 16,942 |
| South Carolina | 16,388 | 3,976 | 5,380 | 5,647 | 15,003 | 1,385 |
| Tennessee | 80,784 | 13,464 | 34,118 | 20,666 | 68,248 | 12,536 |
| WESTERN TRUNK LINE | 921,968 | 262,336 | 179,375 | 223,482 | 665,193 | 256,775 |
| Iowa | 189,557 | 68,474 | 45,278 | 32,374 | 146,126 | 43,431 |
| Kansas | 156,398 | 57,570 | 21,332 | 33,611 | 112,513 | 43,885 |
| Minnesota | 88,250 | 18,462 | 16,276 | 32,125 | 66,863 | 21,387 |
| Missouri | 154,062 | 51,837 | 25,760 | 37,024 | 114,621 | 39,441 |
| Nebraska | 126,800 | 33,261 | 23,597 | 28,181 | 85,039 | 41,761 |
| North Dakota | 48,393 | 9,217 | 7,348 | 11,707 | 28,267 | 20,126 |
| South Dakota | 34,880 | 2,345 | 9,925 | 10,798 | 23,068 | 11,812 |
| Wisconsin | 123,628 | 21,170 | 29,864 | 37,662 | 88,696 | 34,932 |
| SOUTHWESTERN | 466,523 | 141,914 | 62,589 | 117,039 | 321,542 | 144,981 |
| Arkansas | 73,034 | 33,604 | 7,259 | 14,843 | 55,706 | 17,328 |
| Louisiana | 61,735 | 13,585 | 6,354 | 17,980 | 37,919 | 23,816 |
| New Mexico | 25,743 | 9,468 | 2,020 | 4,530 | 16,018 | 9,725 |
| Oklahoma | 82,849 | 16,749 | 20,707 | 26,730 | 64,186 | 18,663 |
| Texas | 223,162 | 68,508 | 26,249 | 52,956 | 147,713 | 75,449 |
| PACIFIC NORTHWEST | 200,557 | 54,085 | 37,520 | 43,956 | 135,561 | 64,996 |
| Idaho | 43,215 | 10,980 | 1,150 | 7,660 | 19,790 | 23,425 |
| Montana | 43,233 | 14,251 | 9,216 | 8,942 | 32,409 | 10,824 |
| Oregon | 19,406 | 4,736 | 669 | 7,887 | 13,292 | 6,114 |
| Washington | 55,250 | 9,942 | 11,807 | 14,021 | 35,770 | 19,480 |
| Wyoming | 39,453 | 14,176 | 14,678 | 5,446 | 34,300 | 5,153 |
| PACIFIC SOUTHWEST | 242,708 | 83,258 | 27,271 | 71,543 | 182,072 | 60,636 |
| Arizona | 16,577 | 9,531 | 2,079 | 1,487 | 13,047 | 3,530 |
| California | 99,286 | 38,596 | 6,342 | 39,276 | 84,214 | 15,072 |
| Colorado | 86,376 | 22,740 | 11,725 | 20,121 | 54,586 | 31,790 |
| Nevada | 13,096 | 6,666 | 3,245 | 1,404 | 11,315 | 1,721 |
| Utah | 27,433 | 5,725 | 3,880 | 9,305 | 18,910 | 8,523 |



SECTION 109. YARDINGS

Analysis 109.1 Rail Unit Costs of Intermediate Yardings

| | AGGREGATE CARS HANDLED | | | COST PER CAR HANDLED | | | |
|---|---|---|---|---|---|---|---|
| | | MULTIPLE CARRIER | | | | MULTIPLE CARRIER | |
| | SINGLE CARRIER (000) | INTER-CHANGE (000) | INTER-MEDIATE (000) | ALL YARDINGS $ | SINGLE CARRIER $ | INTER-CHANGE $ | INTER-MEDIATE $ |
| UNITED STATES | 68,858 | 35,167 | 982 | 3.23 | 2.41 | 4.80 | 4.88 |
| EASTERN | 34,760 | 21,657 | 538 | 3.42 | 2.52 | 4.83 | 4.68 |
| SOUTHERN | 13,026 | 4,643 | 97 | 2.72 | 2.04 | 4.52 | 7.23 |
| WESTERN | 21,072 | 8,866 | 319 | 3.18 | 2.44 | 4.86 | 4.90 |
| NEW ENGLAND | 2,279 | 1,613 | - | 2.90 | 2.57 | 3.37 | - |
| TRUNK LINE | 15,676 | 9,958 | 46 | 3.62 | 2.76 | 4.97 | 6.83 |
| CENTRAL | 16,805 | 10,086 | 476 | 3.31 | 2.30 | 4.93 | 4.61 |
| POCAHONTAS | 5,237 | 1,483 | 35 | 2.24 | 1.76 | 3.82 | 7.75 |
| SOUTHEASTERN | 7,789 | 3,160 | 62 | 3.01 | 2.23 | 4.86 | 6.96 |
| WESTERN TRUNK LINE | 10,622 | 4,652 | 212 | 3.21 | 2.45 | 4.89 | 4.40 |
| SOUTHWESTERN | 5,777 | 2,428 | 26 | 2.64 | 1.93 | 4.29 | 4.93 |
| PACIFIC NORTHWEST | 1,842 | 415 | 3 | 4.31 | 3.57 | 7.54 | 10.59 |
| PACIFIC SOUTHWEST | 2,831 | 1,371 | 21 | 3.51 | 2.65 | 5.00 | 22.15 |

SECTION 110. CONVEYANCE

Analysis 110.1 Rail Unit Costs of Road Service - 1932

| OPERATING DISTRICTS | TRAIN MILE | TRAIN HOUR | LOADED CAR MILE | NET TON MILE | CAR TON MILE | GROSS TON MILE | EQUATED TON MILE |
|---|---|---|---|---|---|---|---|
| UNITED STATES | $ 2.29 | $ 36.80 | $ .0869 | $ .00361 | $ .00135 | $ .00120 | $ .00197 |
| EASTERN | $ 2.52 | $ 38.72 | $ .0848 | $ .00350 | $ .00132 | $ .00116 | $ .00181 |
| SOUTHERN | 2.19 | 35.06 | .0902 | .00326 | .00134 | .00117 | .00169 |
| WESTERN | 2.14 | 35.57 | .0879 | .00462 | .00148 | .00127 | .00239 |
| NEW ENGLAND | $ 2.98 | $ 43.33 | $ .1067 | $ .00612 | $ .00202 | $ .00173 | $ .00316 |
| Connecticut | 3.25 | 51.57 | .0959 | .00557 | .00184 | .00157 | .00288 |
| Maine | 2.88 | 43.36 | .0132 | .00694 | .00234 | .00201 | .00359 |
| Massachusetts | 2.97 | 40.46 | .1101 | .00632 | .00207 | .00177 | .00327 |
| New Hampshire | 3.45 | 47.02 | .0108 | .00590 | .00204 | .00176 | .00305 |
| Rhode Island | 3.19 | 50.03 | .0919 | .00567 | .00174 | .00150 | .00293 |
| Vermont | 2.23 | 29.34 | .0801 | .00539 | .00181 | .00152 | .00279 |
| TRUNK LINE | $ 2.92 | $ 40.73 | $ .0917 | $ .00357 | $ .00141 | $ .00123 | $ .00185 |
| Delaware | 1.89 | 24.02 | .0747 | .00417 | .00126 | .00111 | .00217 |
| Maryland | 2.77 | 35.90 | .0886 | .00340 | .00136 | .00118 | .00176 |
| New Jersey | 2.84 | 40.38 | .1109 | .00388 | .00162 | .00142 | .00201 |
| New York | 3.02 | 46.66 | .0886 | .00407 | .00144 | .00126 | .00210 |
| Pennsylvania | 2.91 | 38.24 | .0922 | .00326 | .00136 | .00119 | .00169 |
| CENTRAL | $ 2.18 | $ 36.31 | $ .0765 | $ .00318 | $ .00118 | $ .00103 | $ .00164 |
| Illinois | 2.04 | 35.35 | .0780 | .00347 | .00122 | .00107 | .00179 |
| Indiana | 2.17 | 38.83 | .0728 | .00335 | .00115 | .00101 | .00173 |
| Michigan | 2.13 | 35.80 | .0872 | .00426 | .00142 | .00122 | .00220 |
| Ohio | 2.34 | 36.40 | .0738 | .00274 | .00109 | .00097 | .00142 |
| POCAHONTAS | $ 2.82 | $ 36.72 | $ .0856 | $ .00225 | $ .00107 | $ .00096 | $ .00116 |
| Virginia | 2.59 | 41.34 | .0812 | .00222 | .00104 | .00093 | .00115 |
| West Virginia | 3.06 | 33.15 | .0903 | .00226 | .00110 | .00098 | .00117 |
| SOUTHEASTERN | $ 1.98 | $ 34.35 | $ .0925 | $ .00409 | $ .00151 | $ .00130 | $ .00211 |
| Alabama | 1.93 | 34.22 | .0974 | .00466 | .00167 | .00141 | .00241 |
| Florida | 1.97 | 36.06 | .1712 | .00732 | .00217 | .00177 | .00378 |
| Georgia | 1.80 | 32.96 | .0904 | .00516 | .00155 | .00132 | .00267 |
| Kentucky | 2.14 | 37.99 | .0798 | .00247 | .00111 | .00093 | .00128 |
| Mississippi | 1.86 | 28.66 | .0823 | .00424 | .00146 | .00129 | .00219 |
| North Carolina | 2.05 | 35.56 | .0875 | .00500 | .00167 | .00141 | .00259 |
| South Carolina | 1.98 | 32.91 | .1066 | .00534 | .00190 | .00158 | .00276 |
| Tennessee | 2.04 | 33.06 | .0989 | .00440 | .00167 | .00142 | .00228 |
| WESTERN TRUNK LINE | $ 1.99 | $ 33.22 | $ .0851 | $ .00439 | $ .00142 | $ .00123 | $ .00227 |
| Iowa | 1.85 | 33.14 | .0865 | .00460 | .00142 | .00121 | .00238 |
| Kansas | 1.99 | 35.23 | .0815 | .00409 | .00134 | .00116 | .00211 |
| Minnesota | 2.29 | 35.01 | .1026 | .00460 | .00167 | .00145 | .00238 |
| Missouri | 1.95 | 34.97 | .0771 | .00402 | .00128 | .00112 | .00208 |
| Nebraska | 1.90 | 32.05 | .0749 | .00423 | .00126 | .00108 | .00219 |
| North Dakota | 2.05 | 33.16 | .0991 | .00488 | .00172 | .00147 | .00252 |
| South Dakota | 1.93 | 28.24 | .1082 | .00532 | .00178 | .00150 | .00275 |
| Wisconsin | 2.14 | 30.47 | .0861 | .00451 | .00148 | .00129 | .00233 |
| SOUTHWESTERN | $ 1.99 | $ 34.33 | $ .0904 | $ .00460 | $ .00147 | $ .00127 | $ .00238 |
| Arkansas | 1.81 | 32.40 | .0764 | .00375 | .00130 | .00116 | .00194 |
| Louisiana | 2.02 | 33.86 | .0102 | .00466 | .00166 | .00147 | .00236 |
| New Mexico | 2.39 | 45.80 | .0854 | .00466 | .00134 | .00115 | .00241 |
| Oklahoma | 1.86 | 29.43 | .0941 | .00445 | .00147 | .00125 | .00230 |
| Texas | 1.99 | 35.19 | .0924 | .00496 | .00151 | .00129 | .00256 |
| PACIFIC NORTHWEST | $ 2.53 | $ 40.68 | $ .0926 | $ .00474 | $ .00154 | $ .00131 | $ .00245 |
| Idaho | 2.20 | 35.37 | .0890 | .00442 | .00148 | .00124 | .00229 |
| Montana | 2.74 | 44.43 | .0840 | .00420 | .00140 | .00120 | .00217 |
| Oregon | 2.55 | 38.76 | .1296 | .00638 | .00226 | .00187 | .00330 |
| Washington | 2.77 | 39.01 | .1409 | .00628 | .00226 | .00187 | .00325 |
| Wyoming | 2.17 | 44.45 | .0578 | .00350 | .00097 | .00085 | .00181 |
| PACIFIC SOUTHWEST | $ 2.52 | $ 40.66 | $ .0888 | $ .00528 | $ .00161 | $ .00138 | $ .00273 |
| Arizona | 2.64 | 48.44 | .0822 | .00483 | .00127 | .00110 | .00250 |
| California | 2.66 | 40.55 | .1042 | .00551 | .00173 | .00144 | .00285 |
| Colorado | 2.05 | 31.55 | .0822 | .00737 | .00241 | .00202 | .00381 |
| Nevada | 2.90 | 55.21 | .0694 | .00373 | .00113 | .00101 | .00193 |
| Utah | 2.53 | 42.72 | .0846 | .00468 | .00141 | .00122 | .00242 |



SECTION 110. CONVEYANCE

Analysis 110.2 Rail Main Line Unit Costs of Road Service - 1932

| | TRAIN MILE | TRAIN HOUR | LOADED CAR MILE | NET TON MILE | EQUATED TON MILE | CAR TON MILE | GROSS TON MILE |
|---|---|---|---|---|---|---|---|
| UNITED STATES | $ 2.36 | $ 39.51 | $ .0817 | $ .0036 | $ .0019 | $ .0013 | $ .0013 |
| EASTERN DISTRICT | 2.53 | 40.81 | .0807 | .0036 | .0019 | .0013 | .0011 |
| SOUTHERN DISTRICT | 2.22 | 37.24 | .0846 | .0031 | .0016 | .0013 | .0011 |
| WESTERN DISTRICT | 2.24 | 39.08 | .0815 | .0043 | .0022 | .0014 | .0012 |
| NEW ENGLAND | $ 3.14 | $ 46.83 | $ .0979 | $ .0056 | $ .0029 | $ .0019 | $ .0016 |
| Connecticut | 3.32 | 53.65 | .0934 | .0054 | .0028 | .0018 | .0015 |
| Maine | 3.42 | 49.09 | .1180 | .0061 | .0032 | .0020 | .0018 |
| Massachusetts | 3.00 | 44.00 | .0980 | .0056 | .0029 | .0019 | .0016 |
| New Hampshire | 3.62 | 54.93 | .0932 | .0050 | .0026 | .0018 | .0015 |
| Rhode Island | 3.20 | 51.86 | .0882 | .0054 | .0028 | .0017 | .0014 |
| Vermont | 2.27 | 30.23 | .0792 | .0053 | .0027 | .0018 | .0015 |
| TRUNK LINE | $ 2.94 | $ 44.55 | $ .0855 | $ .0034 | $ .0018 | $ .0013 | $ .0012 |
| Delaware | 1.97 | 27.12 | .0642 | .0036 | .0019 | .0011 | .0010 |
| Maryland | 2.78 | 38.42 | .0850 | .0033 | .0017 | .0013 | .0011 |
| New Jersey | 2.88 | 45.35 | .1034 | .0036 | .0019 | .0015 | .0013 |
| New York | 3.02 | 48.09 | .0855 | .0040 | .0021 | .0014 | .0012 |
| Pennsylvania | 2.93 | 43.10 | .0837 | .0030 | .0016 | .0012 | .0011 |
| CENTRAL | $ 2.20 | $ 37.28 | $ .0747 | $ .0031 | $ .0016 | $ .0012 | $ .0010 |
| Illinois | 2.05 | 36.29 | .0758 | .0034 | .0018 | .0012 | .0011 |
| Indiana | 2.18 | 39.27 | .0722 | .0033 | .0017 | .0011 | .0010 |
| Michigan | 2.17 | 37.89 | .0842 | .0041 | .0021 | .0014 | .0012 |
| Ohio | 2.33 | 37.16 | .0724 | .0027 | .0014 | .0011 | .0009 |
| POCAHONTAS | $ 2.78 | $ 40.47 | $ .0794 | $ .0021 | $ .0011 | $ .0010 | $ .0009 |
| Virginia | 2.58 | 43.75 | .0775 | .0021 | .0011 | .0010 | .0009 |
| West Virginia | 3.03 | 37.50 | .0814 | .0021 | .0011 | .0010 | .0009 |
| SOUTHEASTERN | $ 2.03 | $ 35.97 | $ .0872 | $ .0039 | $ .0020 | $ .0014 | $ .0012 |
| Alabama | 1.96 | 35.76 | .0927 | .0045 | .0024 | .0016 | .0014 |
| Florida | 2.19 | 41.27 | .1513 | .0066 | .0034 | .0019 | .0016 |
| Georgia | 1.91 | 35.86 | .0859 | .0049 | .0025 | .0015 | .0013 |
| Kentucky | 2.27 | 39.29 | .0771 | .0024 | .0012 | .0011 | .0010 |
| Mississippi | 1.85 | 29.09 | .0784 | .0040 | .0021 | .0014 | .0012 |
| North Carolina | 2.09 | 37.05 | .0828 | .0047 | .0024 | .0016 | .0014 |
| South Carolina | 1.97 | 32.36 | .1011 | .0050 | .0026 | .0018 | .0015 |
| Tennessee | 2.06 | 33.93 | .0944 | .0042 | .0022 | .0016 | .0014 |
| WESTERN TRUNK LINE | $ 2.11 | $ 36.72 | $ .0792 | $ .0041 | $ .0021 | $ .0013 | $ .0012 |
| Iowa | 1.93 | 35.83 | .0819 | .0044 | .0023 | .0014 | .0012 |
| Kansas | 2.12 | 39.66 | .0740 | .0037 | .0019 | .0012 | .0011 |
| Minnesota | 2.47 | 38.64 | .0962 | .0043 | .0022 | .0016 | .0014 |
| Missouri | 2.02 | 38.48 | .0731 | .0038 | .0020 | .0012 | .0011 |
| Nebraska | 2.04 | 36.86 | .0694 | .0038 | .0020 | .0011 | .0010 |
| North Dakota | 2.30 | 38.66 | .0901 | .0045 | .0023 | .0016 | .0014 |
| South Dakota | 2.06 | 31.20 | .1021 | .0050 | .0026 | .0017 | .0014 |
| Wisconsin | 2.23 | 32.70 | .0816 | .0043 | .0022 | .0014 | .0012 |
| SOUTHWESTERN | $ 2.06 | $ 36.93 | $ .0837 | $ .0043 | $ .0022 | $ .0014 | $ .0012 |
| Arkansas | 1.84 | 34.79 | .0707 | .0035 | .0018 | .0012 | .0011 |
| Louisiana | 2.10 | 36.14 | .0935 | .0041 | .0021 | .0015 | .0014 |
| New Mexico | 2.60 | 51.64 | .0812 | .0046 | .0024 | .0013 | .0011 |
| Oklahoma | 1.90 | 30.00 | .0885 | .0042 | .0042 | .0014 | .0012 |
| Texas | 2.09 | 38.55 | .0952 | .0046 | .0024 | .0014 | .0012 |
| PACIFIC NORTHWEST | $ 2.69 | $ 46.12 | $ .0830 | $ .0043 | $ .0022 | $ .0014 | $ .0012 |
| Idaho | 2.44 | 42.41 | .0738 | .0037 | .0019 | .0013 | .0011 |
| Montana | 2.90 | 48.46 | .0795 | .0040 | .0021 | .0013 | .0011 |
| Oregon | 3.02 | 50.45 | .1070 | .0054 | .0028 | .0019 | .0016 |
| Washington | 2.95 | 44.08 | .1264 | .0057 | .0029 | .0020 | .0017 |
| Wyoming | 2.19 | 45.54 | .0568 | .0035 | .0018 | .0010 | .0008 |
| PACIFIC SOUTHWEST | $ 2.61 | $ 44.17 | $ .0838 | $ .0050 | $ .0026 | $ .0015 | $ .0013 |
| Arizona | 2.70 | 51.16 | .0776 | .0046 | .0024 | .0012 | .0011 |
| California | 2.79 | 44.14 | .0981 | .0052 | .0027 | .0016 | .0014 |
| Colorado | 2.05 | 34.42 | .0763 | .0066 | .0034 | .0022 | .0018 |
| Nevada | 3.06 | 59.86 | .0679 | .0037 | .0019 | .0011 | .0010 |
| Utah | 2.57 | 44.71 | .0805 | .0045 | .0023 | .0014 | .0012 |

SECTION 110. CONVEYANCE

Analysis 110.3 Rail Manifest Train Unit Costs of Road Service - 1932

| | SCHED-ULES (000) | TRAIN MILES PER TRAIN HOUR | LOADED CARS PER TRAIN | COSTS OF MANIFEST TRAINS PER: TRAIN HOUR | TRAIN MILE | LOADED CAR MILE | NET TON MILE | EQUATED TON MILE | CAR TON MILE | GROSS TON MILE |
|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 1,342 | 21 | 40 | $53.15 | $2.51 | $.062 | $.0033 | $.0017 | $.0012 | $.0010 |
| NEW ENGLAND | 40 | 21 | 48 | $62.46 | $3.04 | $.064 | $.0042 | $.0022 | $.0014 | $.0013 |
| Connecticut | 16 | 22 | 52 | 71.50 | 3.26 | .063 | .0044 | .0023 | .0015 | .0013 |
| Maine | 4 | 19 | 37 | 60.00 | 3.11 | .084 | .0047 | .0024 | .0017 | .0015 |
| Massachusetts | 12 | 20 | 47 | 57.69 | 2.91 | .062 | .0041 | .0021 | .0014 | .0012 |
| New Hampshire | 1 | 21 | 60 | 74.58 | 3.58 | .059 | .0037 | .0019 | .0013 | .0012 |
| Rhode Island | 3 | 24 | 50 | 73.16 | 3.00 | .060 | .0047 | .0024 | .0016 | .0014 |
| Vermont | 5 | 18 | 47 | 43.76 | 2.39 | .050 | .0036 | .0019 | .0014 | .0012 |
| TRUNK LINE | 275 | 21 | 49 | $62.72 | $3.03 | $.062 | $.0029 | $.0015 | $.0011 | $.0010 |
| Delaware | 2 | 22 | 50 | 60.06 | 2.68 | .054 | .0030 | .0016 | .0010 | .0009 |
| Maryland | 24 | 18 | 40 | 51.40 | 2.84 | .071 | .0030 | .0016 | .0012 | .0011 |
| New Jersey | 39 | 21 | 35 | 64.55 | 3.01 | .086 | .0034 | .0018 | .0014 | .0012 |
| New York | 72 | 22 | 58 | 75.73 | 3.37 | .058 | .0032 | .0017 | .0012 | .0011 |
| Pennsylvania | 138 | 20 | 48 | 57.40 | 2.87 | .060 | .0026 | .0014 | .0010 | .0010 |
| CENTRAL | 323 | 22 | 39 | $51.25 | $2.29 | $.059 | $.0033 | $.0017 | $.0011 | $.0010 |
| Illinois | 115 | 23 | 35 | 48.12 | 2.09 | .060 | .0033 | .0017 | .0011 | .0010 |
| Indiana | 38 | 24 | 45 | 57.95 | 2.44 | .054 | .0031 | .0016 | .0011 | .0011 |
| Michigan | 53 | 21 | 33 | 49.02 | 2.34 | .071 | .0036 | .0019 | .0013 | .0011 |
| Ohio | 116 | 22 | 44 | 52.83 | 2.40 | .055 | .0031 | .0016 | .0011 | .0009 |
| POCAHONTAS | 52 | 20 | 44 | $50.74 | $2.55 | $.058 | $.0022 | $.0011 | $.0010 | $.0009 |
| Virginia | 23 | 21 | 45 | 55.74 | 2.68 | .060 | .0019 | .0010 | .0009 | .0008 |
| West Virginia | 29 | 19 | 43 | 45.84 | 2.42 | .056 | .0027 | .0014 | .0011 | .0009 |
| SOUTHEASTERN | 110 | 21 | 32 | $47.51 | $2.23 | $.070 | $.0039 | $.0020 | $.0013 | $.0012 |
| Alabama | 12 | 22 | 31 | 49.88 | 2.28 | .075 | .0041 | .0021 | .0014 | .0012 |
| Florida | 6 | 23 | 21 | 67.43 | 2.95 | .142 | .0054 | .0028 | .0017 | .0015 |
| Georgia | 17 | 22 | 34 | 51.31 | 2.29 | .067 | .0042 | .0022 | .0013 | .0012 |
| Kentucky | 17 | 23 | 32 | 44.52 | 1.96 | .061 | .0031 | .0016 | .0011 | .0009 |
| Mississippi | 23 | 20 | 35 | 37.63 | 1.86 | .054 | .0030 | .0016 | .0011 | .0010 |
| North Carolina | 18 | 21 | 35 | 50.97 | 2.46 | .071 | .0046 | .0024 | .0015 | .0013 |
| South Carolina | 4 | 18 | 24 | 39.23 | 2.18 | .092 | .0046 | .0024 | .0017 | .0014 |
| Tennessee | 13 | 20 | 30 | 42.66 | 2.09 | .070 | .0038 | .0020 | .0014 | .0012 |
| WESTERN TRUNK LINE | 262 | 21 | 37 | $47.62 | $2.22 | $.060 | $.0033 | $.0017 | $.0011 | $.0010 |
| Iowa | 68 | 22 | 30 | 43.32 | 1.95 | .066 | .0038 | .0020 | .0012 | .0011 |
| Kansas | 58 | 22 | 39 | 51.03 | 2.32 | .059 | .0032 | .0017 | .0011 | .0010 |
| Minnesota | 18 | 19 | 39 | 50.00 | 2.64 | .068 | .0034 | .0018 | .0013 | .0011 |
| Missouri | 52 | 23 | 36 | 49.11 | 2.09 | .059 | .0033 | .0017 | .0011 | .0010 |
| Nebraska | 33 | 21 | 46 | 48.62 | 2.26 | .049 | .0029 | .0015 | .0010 | .0008 |
| North Dakota | 9 | 19 | 45 | 54.45 | 2.92 | .064 | .0034 | .0018 | .0013 | .0012 |
| South Dakota | 2 | 20 | 33 | 50.00 | 2.47 | .075 | .0039 | .0020 | .0014 | .0012 |
| Wisconsin | 21 | 18 | 39 | 43.18 | 2.37 | .061 | .0033 | .0017 | .0012 | .0010 |
| SOUTHWESTERN | 142 | 22 | 33 | $49.38 | $2.30 | $.069 | $.0037 | $.0019 | $.0012 | $.0011 |
| Arkansas | 34 | 24 | 33 | 45.11 | 1.89 | .057 | .0029 | .0015 | .0010 | .0009 |
| Louisiana | 14 | 22 | 28 | 48.67 | 2.23 | .080 | .0037 | .0019 | .0013 | .0012 |
| New Mexico | 9 | 21 | 43 | 62.24 | 2.91 | .067 | .0040 | .0021 | .0012 | .0011 |
| Oklahoma | 17 | 22 | 30 | 45.15 | 2.10 | .069 | .0035 | .0018 | .0012 | .0010 |
| Texas | 69 | 21 | 33 | 49.01 | 3.38 | .073 | .0040 | .0021 | .0013 | .0011 |
| PACIFIC NORTHWEST | 54 | 19 | 49 | 60.05 | 3.11 | .063 | .0036 | .0019 | .0013 | .0011 |
| Idaho | 11 | 20 | 46 | 58.76 | 2.93 | .064 | .0034 | .0018 | .0012 | .0010 |
| Montana | 14 | 19 | 57 | 65.42 | 3.44 | .060 | .0033 | .0017 | .0012 | .0011 |
| Oregon | 5 | 18 | 39 | 67.13 | 3.73 | .095 | .0049 | .0025 | .0018 | .0015 |
| Washington | 10 | 16 | 39 | 55.91 | 3.58 | .092 | .0047 | .0024 | .0017 | .0015 |
| Wyoming | 14 | 23 | 56 | 55.27 | 2.42 | .043 | .0029 | .0015 | .0009 | .0008 |
| PACIFIC SOUTHWEST | 83 | 20 | 44 | $57.41 | $2.87 | $.066 | $.0041 | $.0021 | $.0014 | $.0012 |
| Arizona | 10 | 21 | 43 | 59.32 | 2.93 | .068 | .0041 | .0021 | .0012 | .0011 |
| California | 39 | 19 | 41 | 58.28 | 3.08 | .075 | .0041 | .0021 | .0014 | .0012 |
| Colorado | 23 | 21 | 38 | 48.44 | 2.26 | .060 | .0059 | .0031 | .0020 | .0017 |
| Nevada | 7 | 20 | 64 | 67.50 | 3.35 | .053 | .0029 | .0015 | .0011 | .0010 |
| Utah | 6 | 21 | 43 | 56.93 | 2.76 | .064 | .0040 | .0021 | .0013 | .0011 |



SECTION 110. CONVEYANCE

Analysis 110.4 Rail Drag Train Unit Costs of Road Service - 1932

| | SCHED-ULES (000) | TRAIN MILES PER TRAIN HOUR | LOADED CARS PER TRAIN | COSTS OF DRAG TRAINS PER: TRAIN HOUR | TRAIN MILE | LOADED CAR MILE | NET TON MILE | EQUATED TON MILE | CAR TON MILE | GROSS TON MILE |
|---|---|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 1,308 | 17 | 26 | $42.93 | $2.55 | $.099 | $.0032 | $.0017 | $.0012 | $.0010 |
| NEW ENGLAND | 61 | 16 | 32 | $53.10 | $3.35 | $.105 | $.0053 | $.0027 | $.0017 | $.0015 |
| Connecticut | 21 | 17 | 32 | 59.50 | 3.47 | .109 | .0052 | .0027 | .0016 | .0014 |
| Maine | 10 | 15 | 33 | 54.28 | 3.62 | .108 | .0053 | .0027 | .0018 | .0016 |
| Massachusetts | 18 | 15 | 31 | 50.25 | 3.30 | .108 | .0055 | .0028 | .0018 | .0015 |
| New Hampshire | 2 | 16 | 37 | 58.26 | 3.69 | .100 | .0050 | .0026 | .0017 | .0014 |
| Rhode Island | 5 | 16 | 35 | 58.46 | 3.71 | .105 | .0049 | .0025 | .0014 | .0012 |
| Vermont | 5 | 17 | 29 | 37.41 | 2.24 | .078 | .0048 | .0025 | .0015 | .0013 |
| TRUNK LINE | 272 | 15 | 26 | $48.69 | $3.28 | $.126 | $.0035 | $.0018 | $.0013 | $.0012 |
| Delaware | 1 | 18 | 9 | 31.41 | 1.75 | .192 | .0088 | .0045 | .0015 | .0013 |
| Maryland | 6 | 14 | 28 | 55.01 | 3.89 | .141 | .0029 | .0015 | .0021 | .0010 |
| New Jersey | 21 | 14 | 34 | 63.20 | 4.54 | .132 | .0031 | .0016 | .0015 | .0013 |
| New York | 107 | 18 | 26 | 55.13 | 3.10 | .118 | .0042 | .0022 | .0014 | .0012 |
| Pennsylvania | 138 | 13 | 25 | 43.37 | 3.34 | .132 | .0031 | .0016 | .0013 | .0012 |
| CENTRAL | 336 | 17 | 27 | $39.75 | $2.40 | $.089 | $.0025 | $.0013 | $.0010 | $.0009 |
| Illinois | 117 | 16 | 24 | 35.73 | 2.17 | .090 | .0029 | .0015 | .0010 | .0010 |
| Indiana | 54 | 18 | 24 | 40.02 | 2.28 | .096 | .0031 | .0016 | .0011 | .0010 |
| Michigan | 26 | 18 | 24 | 40.23 | 2.19 | .091 | .0041 | .0021 | .0012 | .0011 |
| Ohio | 138 | 16 | 31 | 42.57 | 2.67 | .086 | .0021 | .0011 | .0010 | .0009 |
| POCAHONTAS | 113 | 15 | 38 | $50.24 | $3.43 | $.090 | $.0019 | $.0010 | $.0010 | $.0009 |
| Virginia | 56 | 18 | 35 | 55.13 | 3.11 | .088 | .0021 | .0011 | .0010 | .0009 |
| West Virginia | 58 | 12 | 43 | 45.67 | 3.88 | .091 | .0017 | .0009 | .0009 | .0008 |
| SOUTHEASTERN | 218 | 19 | 25 | $41.01 | $2.12 | $.083 | $.0032 | $.0017 | $.0013 | $.0011 |
| Alabama | 32 | 20 | 23 | 39.21 | 1.96 | .081 | .0039 | .0020 | .0014 | .0011 |
| Florida | 8 | 23 | 13 | 44.31 | 1.95 | .146 | .0078 | .0040 | .0022 | .0011 |
| Georgia | 28 | 20 | 20 | 39.36 | 1.96 | .097 | .0053 | .0027 | .0015 | .0011 |
| Kentucky | 71 | 20 | 31 | 44.88 | 2.30 | .073 | .0021 | .0011 | .0010 | .0010 |
| Mississippi | 8 | 18 | 19 | 32.41 | 1.83 | .098 | .0041 | .0021 | .0013 | .0012 |
| North Carolina | 31 | 18 | 28 | 41.62 | 2.25 | .081 | .0043 | .0022 | .0015 | .0013 |
| South Carolina | 5 | 19 | 24 | 38.42 | 2.05 | .086 | .0042 | .0022 | .0015 | .0013 |
| Tennessee | 34 | 18 | 24 | 37.94 | 2.09 | .089 | .0036 | .0019 | .0014 | .0011 |
| WESTERN TRUNK LINE | 179 | 17 | 23 | $38.25 | $2.21 | $.096 | $.0043 | $.0022 | $.0013 | $.0011 |
| Iowa | 45 | 18 | 20 | 35.43 | 2.02 | .099 | .0045 | .0023 | .0013 | .0011 |
| Kansas | 21 | 19 | 19 | 39.74 | 2.07 | .106 | .0045 | .0023 | .0012 | .0011 |
| Minnesota | 16 | 16 | 27 | 40.42 | 2.58 | .096 | .0035 | .0018 | .0013 | .0011 |
| Missouri | 26 | 19 | 26 | 43.49 | 2.32 | .089 | .0038 | .0020 | .0012 | .0010 |
| Nebraska | 24 | 17 | 16 | 35.94 | 2.10 | .129 | .0069 | .0036 | .0014 | .0012 |
| North Dakota | 7 | 18 | 24 | 44.06 | 2.51 | .104 | .0045 | .0023 | .0015 | .0013 |
| South Dakota | 10 | 17 | 24 | 36.21 | 2.18 | .093 | .0043 | .0022 | .0015 | .0013 |
| Wisconsin | 30 | 16 | 29 | 36.51 | 2.25 | .078 | .0039 | .0020 | .0013 | .0011 |
| SOUTHWESTERN | 63 | 19 | 22 | $39.62 | $2.12 | $.095 | $.0043 | $.0022 | $.0013 | $.0011 |
| Arkansas | 7 | 18 | 19 | 34.00 | 1.91 | .100 | .0043 | .0022 | .0012 | .0010 |
| Louisiana | 6 | 19 | 27 | 48.73 | 2.58 | .096 | .0039 | .0020 | .0015 | .0014 |
| New Mexico | 2 | 18 | 12 | 42.98 | 2.37 | .206 | .0080 | .0041 | .0014 | .0012 |
| Oklahoma | 21 | 19 | 27 | 39.94 | 2.11 | .079 | .0036 | .0019 | .0012 | .0011 |
| Texas | 26 | 19 | 20 | 37.78 | 2.01 | .100 | .0049 | .0025 | .0013 | .0011 |
| PACIFIC NORTHWEST | 38 | 18 | 18 | $48.13 | $2.70 | $.148 | $.0059 | $.0031 | $.0015 | $.0013 |
| Idaho | 1 | 17 | 11 | 46.91 | 2.69 | .214 | .0057 | .0029 | .0012 | .0010 |
| Montana | 10 | 18 | 26 | 53.96 | 3.01 | .116 | .0053 | .0027 | .0014 | .0012 |
| Oregon | 1 | 14 | 16 | 47.58 | 3.50 | .221 | .0085 | .0044 | .0021 | .0018 |
| Washington | 12 | 16 | 18 | 51.64 | 3.14 | .172 | .0064 | .0033 | .0021 | .0018 |
| Wyoming | 15 | 20 | 11 | 37.12 | 1.87 | .169 | .0063 | .0033 | .0010 | .0009 |
| PACIFIC SOUTHWEST | 27 | 17 | 12 | $41.17 | $2.46 | $.214 | $.0107 | $.0055 | $.0017 | $.0014 |
| Arizona | 2 | 20 | 8 | 47.58 | 2.44 | .323 | .0167 | .0086 | .0013 | .0011 |
| California | 6 | 16 | 12 | 46.49 | 2.82 | .237 | .0100 | .0052 | .0016 | .0014 |
| Colorado | 12 | 16 | 15 | 31.50 | 2.03 | .139 | .0119 | .0062 | .0028 | .0023 |
| Nevada | 3 | 19 | 8 | 46.57 | 2.49 | .330 | .0126 | .0065 | .0012 | .0010 |
| Utah | 4 | 15 | 12 | 45.26 | 2.97 | .240 | .0061 | .0032 | .0017 | .0014 |

SECTION 111. DISTRIBUTION

Analysis 111.1 Road Service Units - Main Line Way Trains - 1932

| OPERATING DISTRICT | TRAIN MILES THOUSANDS | LOADED CARS THOUSANDS | NET TONS THOUSANDS | LOADED CAR MILES THOUSANDS | NET TON MILES MILLIONS | CAR TON MILES MILLIONS |
|---|---|---|---|---|---|---|
| UNITED STATES | 81,632 | 19,258 | 489,401 | 950,998 | 23,751 | 67,697 |
| EASTERN DISTRICT | 32,680 | 11,032 | 286,036 | 441,996 | 11,892 | 32,186 |
| SOUTHERN DISTRICT | 15,560 | 3,063 | 86,251 | 164,377 | 4,270 | 11,564 |
| WESTERN DISTRICT | 33,392 | 5,164 | 117,115 | 344,625 | 7,589 | 23,947 |
| NEW ENGLAND | 2,461 | 869 | 15,199 | 27,926 | 495 | 1,628 |
| Connecticut | 468 | 206 | 4,186 | 3,174 | 67 | 208 |
| Maine | 647 | 163 | 3,217 | 10,343 | 186 | 680 |
| Massachusetts | 908 | 365 | 5,826 | 11,278 | 191 | 560 |
| New Hampshire | 61 | 29 | 603 | 602 | 11 | 34 |
| Rhode Island | 116 | 39 | 765 | 718 | 15 | 45 |
| Vermont | 262 | 67 | 603 | 1,811 | 24 | 101 |
| TRUNK LINE | 13,068 | 5,658 | 147,876 | 206,438 | 5,773 | 15,082 |
| Delaware | 271 | 109 | 1,911 | 4,704 | 80 | 260 |
| Maryland | 613 | 244 | 6,709 | 7,505 | 216 | 550 |
| New Jersey | 1,582 | 871 | 22,053 | 26,237 | 728 | 1,745 |
| New York | 4,958 | 1,382 | 29,757 | 63,013 | 1,583 | 4,835 |
| Pennsylvania | 5,644 | 3,053 | 87,446 | 104,979 | 3,167 | 7,692 |
| CENTRAL | 17,151 | 4,504 | 122,961 | 207,632 | 5,623 | 15,477 |
| Illinois | 4,305 | 1,060 | 27,955 | 41,590 | 1,080 | 3,240 |
| Indiana | 2,561 | 606 | 16,323 | 25,287 | 718 | 2,194 |
| Michigan | 2,404 | 356 | 8,607 | 21,843 | 494 | 1,420 |
| Ohio | 7,882 | 2,482 | 70,075 | 118,912 | 3,332 | 8,623 |
| POCAHONTAS | 2,902 | 949 | 41,208 | 33,463 | 1,218 | 2,719 |
| Virginia | 1,535 | 229 | 6,341 | 13,068 | 327 | 1,020 |
| West Virginia | 1,367 | 721 | 34,868 | 20,395 | 891 | 1,699 |
| SOUTHEASTERN | 12,658 | 2,114 | 45,042 | 130,914 | 3,052 | 8,845 |
| Alabama | 2,395 | 356 | 6,889 | 27,802 | 640 | 1,709 |
| Florida | 1,255 | 223 | 4,671 | 13,175 | 275 | 1,045 |
| Georgia | 1,956 | 339 | 6,364 | 21,761 | 458 | 1,446 |
| Kentucky | 1,630 | 243 | 7,208 | 16,135 | 497 | 1,202 |
| Mississippi | 1,523 | 326 | 6,761 | 15,305 | 345 | 1,011 |
| North Carolina | 1,911 | 323 | 5,795 | 15,236 | 312 | 1,014 |
| South Carolina | 484 | 58 | 1,134 | 4,959 | 97 | 287 |
| Tennessee | 1,504 | 247 | 6,219 | 16,541 | 428 | 1,132 |
| WESTERN TRUNK LINE | 15,528 | 2,803 | 64,511 | 157,297 | 3,391 | 10,823 |
| Iowa | 2,194 | 384 | 8,997 | 17,664 | 363 | 1,307 |
| Kansas | 2,608 | 485 | 10,508 | 28,424 | 666 | 2,040 |
| Minnesota | 2,358 | 362 | 9,810 | 26,576 | 626 | 1,752 |
| Missouri | 2,330 | 404 | 11,116 | 19,835 | 459 | 1,526 |
| Nebraska | 1,358 | 224 | 4,541 | 12,770 | 266 | 884 |
| North Dakota | 1,259 | 193 | 4,102 | 14,406 | 294 | 855 |
| South Dakota | 1,182 | 204 | 4,459 | 14,149 | 271 | 914 |
| Wisconsin | 2,239 | 546 | 10,976 | 23,473 | 446 | 1,546 |
| SOUTHWESTERN | 9,897 | 1,588 | 34,787 | 101,331 | 2,148 | 6,884 |
| Arkansas | 1,279 | 211 | 4,476 | 12,159 | 249 | 707 |
| Louisiana | 1,372 | 296 | 7,690 | 17,572 | 403 | 1,102 |
| New Mexico | 489 | 48 | 875 | 4,639 | 119 | 416 |
| Oklahoma | 2,273 | 336 | 8,110 | 22,972 | 510 | 1,597 |
| Texas | 4,484 | 697 | 13,635 | 43,989 | 866 | 3,063 |
| PACIFIC NORTHWEST | 3,516 | 438 | 11,137 | 43,157 | 1,036 | 3,099 |
| Idaho | 484 | 84 | 579 | 4,783 | 105 | 371 |
| Montana | 1,011 | 163 | 4,362 | 15,174 | 383 | 1,113 |
| Oregon | 605 | 30 | 652 | 6,780 | 147 | 481 |
| Washington | 1,171 | 206 | 5,145 | 12,760 | 303 | 845 |
| Wyoming | 245 | 15 | 400 | 3,660 | 98 | 289 |
| PACIFIC SOUTHWEST | 4,452 | 334 | 6,679 | 42,840 | 1,014 | 3,141 |
| Arizona | 215 | 19 | 163 | 1,972 | 44 | 176 |
| California | 2,658 | 144 | 2,952 | 26,200 | 578 | 1,848 |
| Colorado | 1,044 | 158 | 3,066 | 10,244 | 264 | 721 |
| Nevada | 151 | 2 | 154 | 1,233 | 31 | 97 |
| Utah | 383 | 7 | 339 | 3,191 | 98 | 298 |



SECTION 111. DISTRIBUTION

Analysis 111.2 Road Service Units - Branch Line Way Trains - 1932

| OPERATING DISTRICT | TRAIN MILES THOUSANDS | LOADED CARS THOUSANDS | NET TONS THOUSANDS | LOADED CAR MILES THOUSANDS | NET TON MILES MILLIONS | CAR TON MILES MILLIONS |
|---|---|---|---|---|---|---|
| UNITED STATES | 45,634 | 10,785 | 300,648 | 353,459 | 8,896 | 23,096 |
| EASTERN DISTRICT | 11,637 | 5,327 | 163,699 | 103,974 | 3,337 | 7,419 |
| SOUTHERN DISTRICT | 7,525 | 1,643 | 51,916 | 55,161 | 1,668 | 4,054 |
| WESTERN DISTRICT | 26,472 | 3,816 | 85,033 | 194,324 | 3,891 | 11,621 |
| NEW ENGLAND | 1,957 | 450 | 7,763 | 12,159 | 217 | 598 |
| Connecticut | 150 | 47 | 748 | 794 | 13 | 46 |
| Maine | 1,038 | 183 | 3,493 | 6,846 | 122 | 301 |
| Massachusetts | 597 | 174 | 2,773 | 3,606 | 67 | 204 |
| New Hampshire | 101 | 29 | 550 | 594 | 11 | 32 |
| Rhode Island | 30 | 9 | 124 | 92 | 2 | 5 |
| Vermont | 40 | 10 | 74 | 227 | 3 | 10 |
| TRUNK LINE | 6,152 | 3,781 | 124,552 | 63,194 | 2,247 | 4,705 |
| Delaware | 173 | 52 | 1,135 | 1,247 | 28 | 84 |
| Maryland | 197 | 126 | 3,584 | 1,853 | 48 | 118 |
| New Jersey | 522 | 343 | 8,232 | 4,550 | 125 | 330 |
| New York | 1,197 | 609 | 17,605 | 15,683 | 608 | 1,106 |
| Pennsylvania | 4,062 | 2,651 | 93,995 | 39,861 | 1,438 | 3,068 |
| CENTRAL | 3,528 | 1,096 | 31,385 | 28,621 | 873 | 2,115 |
| Illinois | 1,338 | 282 | 8,220 | 9,595 | 272 | 698 |
| Indiana | 256 | 64 | 1,441 | 2,399 | 55 | 141 |
| Michigan | 935 | 130 | 3,749 | 5,852 | 166 | 407 |
| Ohio | 997 | 619 | 17,974 | 10,775 | 379 | 868 |
| POCAHONTAS | 1,584 | 630 | 31,125 | 16,809 | 753 | 1,475 |
| Virginia | 518 | 299 | 14,093 | 4,372 | 146 | 291 |
| West Virginia | 1,066 | 332 | 17,031 | 12,437 | 608 | 1,184 |
| SOUTHERN | 5,942 | 1,012 | 20,792 | 38,352 | 915 | 2,579 |
| Alabama | 787 | 135 | 3,506 | 6,081 | 158 | 406 |
| Florida | 1,493 | 223 | 4,927 | 8,601 | 218 | 677 |
| Georgia | 1,342 | 209 | 3,444 | 9,180 | 161 | 519 |
| Kentucky | 633 | 68 | 2,589 | 4,433 | 190 | 392 |
| Mississippi | 258 | 73 | 1,471 | 1,680 | 34 | 93 |
| North Carolina | 885 | 160 | 2,509 | 4,991 | 87 | 282 |
| South Carolina | 101 | 39 | 280 | 675 | 11 | 40 |
| Tennessee | 443 | 105 | 2,067 | 2,711 | 56 | 169 |
| WESTERN TRUNK LINE | 12,941 | 1,782 | 43,942 | 92,005 | 1,782 | 5,429 |
| Iowa | 2,176 | 279 | 9,495 | 12,953 | 243 | 756 |
| Kansas | 2,766 | 381 | 8,812 | 22,888 | 503 | 1,461 |
| Minnesota | 1,321 | 164 | 3,227 | 8,468 | 160 | 505 |
| Missouri | 1,528 | 234 | 6,937 | 13,224 | 204 | 596 |
| Nebraska | 2,244 | 261 | 5,628 | 15,271 | 289 | 958 |
| North Dakota | 1,246 | 149 | 3,235 | 9,778 | 205 | 566 |
| South Dakota | 527 | 76 | 1,676 | 2,703 | 51 | 169 |
| Wisconsin | 1,133 | 238 | 4,932 | 6,720 | 126 | 418 |
| SOUTHWESTERN | 6,670 | 1,205 | 25,513 | 51,690 | 1,105 | 3,316 |
| Arkansas | 811 | 170 | 3,053 | 5,770 | 128 | 393 |
| Louisiana | 786 | 181 | 3,891 | 4,665 | 105 | 300 |
| New Mexico | 555 | 92 | 2,874 | 4,541 | 129 | 316 |
| Oklahoma | 827 | 147 | 3,577 | 6,369 | 153 | 439 |
| Texas | 3,691 | 616 | 12,118 | 30,345 | 591 | 1,869 |
| PACIFIC NORTHWEST | 3,832 | 344 | 8,805 | 25,613 | 609 | 1,708 |
| Idaho | 855 | 22 | 563 | 4,906 | 114 | 363 |
| Montana | 643 | 115 | 2,829 | 4,527 | 107 | 288 |
| Oregon | 1,122 | 17 | 456 | 7,348 | 166 | 470 |
| Washington | 1,071 | 183 | 4,757 | 7,491 | 190 | 491 |
| Wyoming | 141 | 7 | 199 | 1,341 | 32 | 98 |
| PACIFIC SOUTHWEST | 3,030 | 484 | 6,773 | 25,016 | 395 | 1,170 |
| Arizona | 348 | 49 | 996 | 4,468 | 99 | 307 |
| California | 1,411 | 102 | 2,087 | 9,008 | 192 | 596 |
| Colorado | 881 | 325 | 3,541 | 9,531 | 56 | 137 |
| Nevada | 223 | 6 | 130 | 1,159 | 26 | 65 |
| Utah | 166 | 2 | 78 | 850 | 22 | 66 |

SECTION 111. DISTRIBUTION

Analysis 111.3 Rail Way Train Performance - 1932

| | UNITS PER MAIN LINE WAY TRAIN MILE | | | | | UNITS PER BRANCH LINE WAY TRAIN MILE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | LOADED CAR MILES | TON MILES NET | TON MILES EQUATED | TON MILES CAR | TON MILES GROSS | LOADED CAR MILES | TON MILES NET | TON MILES EQUATED | TON MILES CAR | TON MILES GROSS |
| UNITED STATES | 12 | 291 | 563 | 829 | 1,029 | 8 | 195 | 377 | 509 | 667 |
| NEW ENGLAND | 11 | 201 | 389 | 661 | 837 | 6 | 111 | 215 | 306 | 437 |
| Connecticut | 7 | 144 | 279 | 444 | 627 | 5 | 86 | 166 | 307 | 449 |
| Maine | 16 | 288 | 557 | 1,051 | 1,218 | 7 | 117 | 226 | 290 | 431 |
| Massachusetts | 12 | 211 | 408 | 617 | 808 | 6 | 113 | 219 | 342 | 453 |
| New Hampshire | 10 | 185 | 358 | 559 | 706 | 6 | 106 | 205 | 319 | 443 |
| Rhode Island | 6 | 127 | 246 | 390 | 560 | 3 | 46 | 89 | 180 | 314 |
| Vermont | 7 | 93 | 180 | 385 | 527 | 6 | 71 | 137 | 238 | 405 |
| TRUNK LINE | 16 | 442 | 855 | 1,154 | 1,395 | 10 | 365 | 706 | 765 | 974 |
| Delaware | 17 | 293 | 567 | 957 | 1,152 | 7 | 160 | 309 | 484 | 669 |
| Maryland | 12 | 352 | 681 | 897 | 1,155 | 10 | 245 | 474 | 597 | 781 |
| New Jersey | 17 | 460 | 890 | 1,103 | 1,331 | 9 | 240 | 464 | 632 | 848 |
| New York | 13 | 319 | 617 | 975 | 1,209 | 13 | 508 | 983 | 924 | 1,097 |
| Pennsylvania | 19 | 561 | 1,085 | 1,363 | 1,614 | 10 | 354 | 685 | 755 | 976 |
| CENTRAL | 12 | 328 | 634 | 902 | 1,122 | 8 | 248 | 480 | 600 | 764 |
| Illinois | 10 | 251 | 486 | 753 | 937 | 7 | 204 | 395 | 522 | 653 |
| Indiana | 10 | 280 | 542 | 857 | 1,053 | 9 | 216 | 418 | 552 | 698 |
| Michigan | 9 | 205 | 397 | 591 | 780 | 6 | 178 | 344 | 435 | 600 |
| Ohio | 15 | 423 | 818 | 1,094 | 1,351 | 11 | 380 | 735 | 870 | 1,083 |
| POCAHONTAS | 12 | 420 | 812 | 937 | 1,173 | 11 | 476 | 921 | 931 | 1,164 |
| Virginia | 9 | 213 | 412 | 664 | 868 | 8 | 282 | 545 | 561 | 754 |
| West Virginia | 15 | 652 | 1,261 | 1,243 | 1,516 | 12 | 570 | 1,103 | 1,111 | 1,363 |
| SOUTHEASTERN | 10 | 241 | 466 | 699 | 874 | 6 | 154 | 298 | 434 | 597 |
| Alabama | 12 | 267 | 516 | 713 | 883 | 8 | 201 | 389 | 516 | 671 |
| Florida | 11 | 219 | 424 | 832 | 1,048 | 6 | 146 | 282 | 454 | 642 |
| Georgia | 11 | 234 | 453 | 739 | 918 | 7 | 120 | 232 | 387 | 548 |
| Kentucky | 10 | 305 | 590 | 738 | 924 | 7 | 300 | 580 | 620 | 784 |
| Mississippi | 10 | 227 | 439 | 663 | 828 | 7 | 131 | 253 | 360 | 501 |
| North Carolina | 8 | 163 | 315 | 531 | 695 | 6 | 98 | 190 | 319 | 464 |
| South Carolina | 10 | 201 | 389 | 592 | 718 | 7 | 109 | 211 | 394 | 567 |
| Tennessee | 11 | 285 | 551 | 753 | 925 | 6 | 127 | 246 | 381 | 529 |
| WESTERN TRUNK LINE | 10 | 218 | 422 | 697 | 871 | 7 | 138 | 267 | 420 | 567 |
| Iowa | 8 | 166 | 321 | 595 | 753 | 6 | 112 | 217 | 348 | 508 |
| Kansas | 11 | 255 | 493 | 782 | 943 | 8 | 182 | 352 | 528 | 684 |
| Minnesota | 11 | 266 | 515 | 743 | 918 | 6 | 121 | 234 | 382 | 516 |
| Missouri | 9 | 197 | 381 | 655 | 845 | 9 | 134 | 259 | 390 | 513 |
| Nebraska | 9 | 196 | 379 | 651 | 815 | 7 | 129 | 250 | 427 | 573 |
| North Dakota | 11 | 233 | 451 | 680 | 860 | 8 | 164 | 317 | 454 | 606 |
| South Dakota | 12 | 229 | 443 | 773 | 975 | 5 | 96 | 186 | 321 | 468 |
| Wisconsin | 10 | 199 | 385 | 691 | 865 | 6 | 111 | 215 | 369 | 523 |
| SOUTHWESTERN | 10 | 217 | 420 | 696 | 867 | 8 | 166 | 321 | 497 | 651 |
| Arkansas | 10 | 195 | 377 | 553 | 627 | 7 | 158 | 306 | 485 | 584 |
| Louisiana | 13 | 251 | 569 | 803 | 942 | 6 | 133 | 257 | 381 | 491 |
| New Mexico | 9 | 214 | 472 | 851 | 1,120 | 8 | 232 | 449 | 568 | 763 |
| Oklahoma | 10 | 221 | 433 | 702 | 899 | 8 | 185 | 358 | 531 | 710 |
| Texas | 10 | 193 | 373 | 683 | 876 | 8 | 160 | 309 | 506 | 670 |
| PACIFIC NORTHWEST | 12 | 295 | 571 | 881 | 1,089 | 7 | 159 | 308 | 446 | 579 |
| Idaho | 10 | 216 | 418 | 766 | 915 | 6 | 134 | 259 | 424 | 507 |
| Montana | 15 | 379 | 733 | 1,101 | 1,350 | 7 | 167 | 323 | 448 | 636 |
| Oregon | 11 | 214 | 472 | 796 | 1,006 | 7 | 148 | 286 | 419 | 521 |
| Washington | 11 | 259 | 501 | 722 | 928 | 7 | 177 | 342 | 458 | 636 |
| Wyoming | 15 | 398 | 770 | 1,179 | 1,332 | 10 | 225 | 435 | 693 | 776 |
| PACIFIC SOUTHWEST | 10 | 228 | 441 | 705 | 921 | 8 | 130 | 251 | 386 | 529 |
| Arizona | 9 | 204 | 395 | 822 | 1,079 | 13 | 285 | 551 | 880 | 1,138 |
| California | 10 | 218 | 422 | 695 | 940 | 6 | 136 | 263 | 422 | 592 |
| Colorado | 10 | 252 | 487 | 691 | 839 | 11 | 63 | 122 | 155 | 220 |
| Nevada | 8 | 208 | 402 | 639 | 883 | 5 | 115 | 222 | 290 | 436 |
| Utah | 8 | 254 | 491 | 777 | 936 | 5 | 133 | 257 | 397 | 481 |



SECTION 111. DISTRIBUTION

Analysis 111.4 Road Service Unit Costs - Main Line Way Trains - 1932

| | COST PER LOADED CAR MILE | | | | | | |
|---|---|---|---|---|---|---|---|
| OPERATING DISTRICT | TOTAL | OVERHEAD | MAINTENANCE ROAD | MAINTENANCE POWER | CAR | TRAIN | STATION |
| UNITED STATES | $ .173 | $ .034 | $ .026 | $ .020 | $ .005 | $ .084 | $ .004 |
| EASTERN DISTRICT | $ .163 | $ .032 | $ .021 | $ .019 | $ .004 | $ .083 | $ .004 |
| SOUTHERN DISTRICT | .175 | .034 | .029 | .020 | .004 | .084 | .004 |
| WESTERN DISTRICT | .184 | .036 | .032 | .020 | .005 | .086 | .005 |
| NEW ENGLAND | $ .221 | $ .043 | $ .032 | $ .020 | $ .003 | $ .115 | $ .008 |
| Connecticut | .330 | .065 | .037 | .027 | .004 | .180 | .017 |
| Maine | .193 | .038 | .029 | .020 | .003 | .079 | .004 |
| Massachusetts | .200 | .039 | .016 | .019 | .001 | .118 | .007 |
| New Hampshire | .314 | .062 | .022 | .019 | .004 | .195 | .012 |
| Rhode Island | .325 | .064 | .036 | .018 | .004 | .188 | .015 |
| Vermont | .219 | .049 | .035 | .016 | .010 | .129 | .010 |
| TRUNK LINE | $ .160 | $ .031 | $ .019 | $ .021 | $ .004 | $ .080 | $ .005 |
| Delaware | .092 | .018 | .011 | .012 | .003 | .046 | .002 |
| Maryland | .202 | .039 | .024 | .022 | .005 | .104 | .008 |
| New Jersey | .152 | .030 | .020 | .026 | .002 | .070 | .004 |
| New York | .188 | .037 | .020 | .024 | .006 | .095 | .006 |
| Pennsylvania | .145 | .029 | .019 | .019 | .003 | .072 | .003 |
| CENTRAL | $ .157 | $ .031 | $ .021 | $ .017 | $ .005 | $ .079 | $ .004 |
| Illinois | .194 | .038 | .024 | .016 | .006 | .105 | .005 |
| Indiana | .190 | .037 | .023 | .017 | .005 | .103 | .005 |
| Michigan | .179 | .035 | .024 | .019 | .006 | .090 | .005 |
| Ohio | .134 | .026 | .018 | .016 | .004 | .067 | .003 |
| POCAHONTAS | $ .187 | $ .037 | $ .027 | $ .023 | $ .004 | $ .093 | $ .003 |
| Virginia | .198 | .039 | .023 | .024 | .006 | .102 | .004 |
| West Virginia | .180 | .036 | .030 | .022 | .003 | .087 | .002 |
| SOUTHEASTERN | $ .172 | $ .034 | $ .030 | $ .020 | $ .004 | $ .079 | $ .005 |
| Alabama | .148 | .029 | .028 | .019 | .003 | .085 | .004 |
| Florida | .188 | .036 | .044 | .030 | .006 | .068 | .004 |
| Georgia | .143 | .028 | .030 | .017 | .002 | .062 | .004 |
| Kentucky | .186 | .037 | .022 | .016 | .004 | .103 | .004 |
| Mississippi | .192 | .038 | .030 | .017 | .006 | .091 | .010 |
| North Carolina | .213 | .042 | .029 | .021 | .005 | .110 | .006 |
| South Carolina | .160 | .032 | .026 | .022 | .003 | .073 | .004 |
| Tennessee | .172 | .034 | .032 | .019 | .004 | .079 | .004 |
| WESTERN TRUNK LINE | $ .178 | $ .035 | $ .030 | $ .021 | $ .004 | $ .083 | $ .005 |
| Iowa | .207 | .040 | .027 | .019 | .006 | .110 | .005 |
| Kansas | .156 | .030 | .024 | .018 | .006 | .075 | .003 |
| Minnesota | .201 | .040 | .037 | .034 | .002 | .083 | .005 |
| Missouri | .204 | .040 | .031 | .021 | .006 | .099 | .007 |
| Nebraska | .147 | .028 | .021 | .016 | .004 | .075 | .003 |
| North Dakota | .162 | .032 | .032 | .018 | .002 | .075 | .003 |
| South Dakota | .145 | .028 | .037 | .018 | .005 | .054 | .003 |
| Wisconsin | .183 | .036 | .031 | .015 | .003 | .092 | .006 |
| SOUTHWESTERN | $ .174 | $ .034 | $ .031 | $ .019 | $ .005 | $ .077 | $ .005 |
| Arkansas | .182 | .035 | .029 | .016 | .010 | .089 | .003 |
| Louisiana | .147 | .028 | .030 | .016 | .005 | .063 | .005 |
| New Mexico | .214 | .042 | .031 | .024 | .006 | .107 | .004 |
| Oklahoma | .169 | .033 | .036 | .021 | .003 | .073 | .003 |
| Texas | .180 | .035 | .036 | .020 | .005 | .077 | .007 |
| PACIFIC NORTHWEST | $ .178 | $ .035 | $ .032 | $ .020 | $ .005 | $ .083 | $ .003 |
| Idaho | .197 | .038 | .038 | .014 | .004 | .098 | .003 |
| Montana | .144 | .028 | .025 | .019 | .003 | .067 | .002 |
| Oregon | .190 | .037 | .036 | .025 | .004 | .085 | .003 |
| Washington | .214 | .042 | .042 | .022 | .003 | .100 | .005 |
| Wyoming | .141 | .026 | .013 | .015 | .019 | .066 | .002 |
| PACIFIC SOUTHWEST | $ .236 | $ .046 | $ .034 | $ .023 | $ .008 | $ .120 | $ .005 |
| Arizona | .211 | .041 | .024 | .020 | .012 | .109 | .005 |
| California | .245 | .047 | .038 | .022 | .008 | .125 | .005 |
| Colorado | .180 | .035 | .026 | .025 | .004 | .087 | .003 |
| Nevada | .491 | .094 | .062 | .023 | .023 | .271 | .018 |
| Utah | .261 | .051 | .023 | .021 | .008 | .154 | .004 |

SECTION 111. DISTRIBUTION

Analysis 111.5 Road Service Unit Costs - Branch Line Way Trains

| OPERATING DISTRICT | COST PER LOADED CAR MILE | | | | | | |
|---|---|---|---|---|---|---|---|
| | TOTAL | OVERHEAD | MAINTENANCE | | | TRAIN | STATION |
| | | | ROAD | POWER | CAR | | |
| UNITED STATES | $ .236 | $ .046 | $ .026 | $ .020 | $ .005 | $ .132 | $ .007 |
| EASTERN DISTRICT | $ .267 | $ .053 | $ .023 | $ .023 | $ .005 | $ .155 | $ .008 |
| SOUTHERN DISTRICT | .258 | .051 | .034 | .021 | .004 | .142 | .006 |
| WESTERN DISTRICT | .212 | .041 | .025 | .017 | .005 | .118 | .006 |
| NEW ENGLAND | $ .350 | $ .069 | $ .033 | $ .018 | $ .004 | $ .214 | $ .012 |
| Connecticut | .418 | .082 | .034 | .023 | .003 | .253 | .023 |
| Maine | .266 | .052 | .040 | .016 | .003 | .148 | .007 |
| Massachusetts | .465 | .091 | .021 | .019 | .005 | .313 | .016 |
| New Hampshire | .482 | .095 | .024 | .020 | .004 | .319 | .020 |
| Rhode Island | 1.004 | .198 | .042 | .021 | .004 | .683 | .056 |
| Vermont | .193 | .037 | .032 | .014 | .013 | .077 | .020 |
| TRUNK LINE | $ .270 | $ .053 | $ .022 | $ .027 | $ .004 | $ .156 | $ .008 |
| Delaware | .225 | .044 | .015 | .017 | .003 | .139 | .007 |
| Maryland | .268 | .052 | .018 | .018 | .007 | .161 | .012 |
| New Jersey | .299 | .059 | .021 | .031 | .002 | .171 | .015 |
| New York | .225 | .044 | .025 | .027 | .004 | .118 | .007 |
| Pennsylvania | .286 | .056 | .022 | .027 | .004 | .169 | .008 |
| CENTRAL | $ .227 | $ .044 | $ .021 | $ .017 | $ .006 | $ .133 | $ .006 |
| Illinois | .245 | .047 | .021 | .014 | .007 | .149 | .007 |
| Indiana | .168 | .033 | .014 | .010 | .003 | .104 | .004 |
| Michigan | .235 | .046 | .029 | .019 | .010 | .124 | .007 |
| Ohio | .221 | .043 | .020 | .021 | .004 | .129 | .004 |
| POCAHONTAS | $ .288 | $ .057 | $ .033 | $ .021 | $ .005 | $ .168 | $ .004 |
| Virginia | .324 | .065 | .030 | .030 | .004 | .187 | .008 |
| West Virginia | .276 | .054 | .034 | .018 | .005 | .162 | .003 |
| SOUTHEASTERN | $ .245 | $ .048 | $ .035 | $ .021 | $ .004 | $ .130 | $ .007 |
| Alabama | .218 | .043 | .027 | .016 | .003 | .123 | .006 |
| Florida | .267 | .052 | .041 | .034 | .006 | .124 | .007 |
| Georgia | .180 | .036 | .026 | .015 | .002 | .094 | .007 |
| Kentucky | .246 | .049 | .021 | .014 | .004 | .150 | .005 |
| Mississippi | .325 | .064 | .028 | .012 | .007 | .202 | .012 |
| North Carolina | .278 | .054 | .032 | .022 | .007 | .154 | .009 |
| South Carolina | .342 | .067 | .048 | .020 | .003 | .193 | .011 |
| Tennessee | .312 | .062 | .069 | .024 | .003 | .146 | .008 |
| WESTERN TRUNK LINE | $ .997 | $ .039 | $ .024 | $ .017 | $ .004 | $ .108 | $ .005 |
| Iowa | .207 | .041 | .025 | .020 | .004 | .111 | .006 |
| Kansas | .183 | .036 | .023 | .018 | .006 | .096 | .004 |
| Minnesota | .226 | .044 | .028 | .020 | .003 | .123 | .008 |
| Missouri | .166 | .032 | .015 | .010 | .004 | .101 | .004 |
| Nebraska | .209 | .041 | .027 | .017 | .004 | .114 | .006 |
| North Dakota | .176 | .035 | .026 | .019 | .002 | .090 | .004 |
| South Dakota | .235 | .045 | .035 | .018 | .005 | .126 | .006 |
| Wisconsin | .235 | .046 | .025 | .016 | .003 | .137 | .008 |
| SOUTHWESTERN | $ .201 | $ .039 | $ .026 | $ .017 | $ .005 | $ .107 | $ .007 |
| Arkansas | .217 | .042 | .019 | .014 | .010 | .126 | .006 |
| Louisiana | .277 | .054 | .032 | .018 | .006 | .156 | .011 |
| New Mexico | .167 | .032 | .025 | .017 | .008 | .082 | .003 |
| Oklahoma | .210 | .041 | .023 | .020 | .004 | .116 | .006 |
| Texas | .189 | .037 | .028 | .017 | .004 | .096 | .007 |
| PACIFIC NORTHWEST | $ .279 | $ .055 | $ .036 | $ .021 | $ .004 | $ .157 | $ .006 |
| Idaho | .289 | .057 | .024 | .014 | .005 | .183 | .006 |
| Montana | .239 | .047 | .022 | .020 | .002 | .144 | .004 |
| Oregon | .281 | .056 | .027 | .022 | .006 | .163 | .007 |
| Washington | .312 | .062 | .065 | .026 | .003 | .119 | .007 |
| Wyoming | .177 | .034 | .012 | .014 | .005 | .109 | .003 |
| PACIFIC SOUTHWEST | $ .222 | $ .043 | $ .018 | $ .017 | $ .009 | $ .130 | $ .005 |
| Arizona | .178 | .035 | .017 | .015 | .006 | .101 | .004 |
| California | .282 | .055 | .021 | .021 | .013 | .165 | .007 |
| Colorado | .170 | .033 | .014 | .015 | .003 | .101 | .004 |
| Nevada | .220 | .041 | .022 | .012 | .027 | .113 | .005 |
| Utah | .405 | .076 | .019 | .018 | .035 | .250 | .007 |



SECTION 113. INSTRUMENT UTILITY

Analysis 113.1 Modernized Distributive Service - Main Line

| OPERATING DISTRICT | CAR AVERAGES | | | NET TONS PER TRAIN | COST PER CAR | | |
|---|---|---|---|---|---|---|---|
| | AVERAGE LOAD TONS | AVERAGE HAUL (MILES) | NET TON MILES | | PRESENT WAY TRAINS* | MOTOR TRAINS† | HIGHWAY CONTAINER OPERATION ∮ |
| UNITED STATES | 25 | 49 | 1,225 | 291 | $ 21.69 | $ 15.71 | $ 30.67 |
| EASTERN | 26 | 40 | 1,040 | 364 | $ 20.13 | $ 14.04 | $ 28.24 |
| SOUTHERN | 28 | 54 | 1,512 | 274 | 19.20 | 17.87 | 43.80 |
| WESTERN | 13 | 67 | 871 | 227 | 27.20 | 16.88 | 22.65 |
| NEW ENGLAND | 17 | 32 | 544 | 201 | $ 21.69 | $ 10.40 | $ 14.47 |
| Connecticut | 20 | 15 | 300 | 144 | 19.69 | 7.49 | 9.57 |
| Maine | 20 | 63 | 1,260 | 288 | 26.79 | 17.57 | 33.79 |
| Massachusetts | 16 | 31 | 496 | 211 | 20.78 | 9.98 | 13.36 |
| New Hampshire | 21 | 21 | 441 | 185 | 21.03 | 8.96 | 12.96 |
| Rhode Island | 20 | 18 | 360 | 127 | 20.56 | 8.12 | 11.48 |
| Vermont | 9 | 27 | 243 | 93 | 21.30 | 8.26 | 7.13 |
| TRUNK LINE | 26 | 36 | 936 | 442 | $ 16.29 | $ 13.20 | $ 27.10 |
| Delaware | 18 | 43 | 774 | 293 | 16.45 | 12.93 | 20.52 |
| Maryland | 27 | 31 | 837 | 352 | 18.66 | 12.37 | 22.65 |
| New Jersey | 25 | 30 | 750 | 460 | 17.04 | 11.73 | 20.61 |
| New York | 22 | 46 | 1,012 | 319 | 21.04 | 14.43 | 26.05 |
| Pennsylvania | 29 | 34 | 986 | 561 | 17.44 | 13.94 | 25.56 |
| CENTRAL | 27 | 46 | 1,242 | 328 | $ 22.08 | $ 15.52 | $ 31.98 |
| Illinois | 26 | 39 | 1,014 | 251 | 22.41 | 13.83 | 28.22 |
| Indiana | 27 | 42 | 1,134 | 280 | 22.77 | 14.68 | 30.45 |
| Michigan | 24 | 61 | 1,464 | 205 | 25.77 | 18.02 | 39.89 |
| Ohio | 28 | 48 | 1,344 | 423 | 21.23 | 16.54 | 33.85 |
| POCAHONTAS | 43 | 35 | 1,505 | 420 | $ 15.16 | $ 21.05 | $ 38.55 |
| Virginia | 28 | 57 | 1,596 | 213 | 19.46 | 18.51 | 44.84 |
| West Virginia | 48 | 28 | 1,344 | 652 | 13.26 | 20.87 | 38.08 |
| SOUTHEASTERN | 21 | 62 | 1,302 | 241 | $ 21.54 | $ 17.57 | $ 35.19 |
| Alabama | 19 | 78 | 1,482 | 267 | 22.49 | 20.50 | 36.13 |
| Florida | 21 | 59 | 1,239 | 219 | 21.99 | 16.94 | 34.31 |
| Georgia | 19 | 64 | 1,216 | 234 | 20.04 | 17.56 | 32.87 |
| Kentucky | 30 | 66 | 1,980 | 305 | 23.28 | 21.87 | 51.89 |
| Mississippi | 21 | 47 | 987 | 227 | 20.10 | 14.42 | 21.81 |
| North Carolina | 18 | 47 | 846 | 163 | 20.92 | 13.77 | 21.54 |
| South Carolina | 20 | 86 | 1,720 | 201 | 24.84 | 22.40 | 40.31 |
| Tennessee | 25 | 67 | 1,675 | 285 | 22.36 | 19.50 | 43.71 |
| WESTERN TRUNK LINE | 23 | 56 | 1,288 | 218 | $ 26.57 | $ 16.75 | $ 36.61 |
| Iowa | 23 | 46 | 1,058 | 166 | 26.18 | 14.65 | 27.21 |
| Kansas | 22 | 59 | 1,298 | 255 | 25.68 | 17.16 | 35.95 |
| Minnesota | 27 | 73 | 1,971 | 266 | 31.37 | 21.19 | 49.51 |
| Missouri | 28 | 49 | 1,372 | 197 | 26.56 | 16.76 | 34.25 |
| Nebraska | 20 | 57 | 1,140 | 196 | 24.95 | 16.31 | 32.10 |
| North Dakota | 21 | 75 | 1,575 | 233 | 28.64 | 20.30 | 39.07 |
| South Dakota | 22 | 69 | 1,518 | 229 | 26.62 | 19.26 | 39.06 |
| Wisconsin | 20 | 110 | 2,200 | 199 | 24.45 | 27.44 | 52.43 |
| SOUTHWESTERN | 22 | 64 | 1,408 | 217 | $ 23.23 | $ 18.21 | $ 37.50 |
| Arkansas | 21 | 58 | 1,218 | 195 | 22.61 | 16.73 | 34.21 |
| Louisiana | 26 | 59 | 1,534 | 294 | 20.91 | 18.01 | 41.86 |
| New Mexico | 18 | 97 | 1,746 | 244 | 32.76 | 24.27 | 43.84 |
| Oklahoma | 24 | 68 | 1,632 | 224 | 23.67 | 19.49 | 42.28 |
| Texas | 20 | 63 | 1,260 | 193 | 23.53 | 17.57 | 33.79 |
| PACIFIC NORTHWEST | 25 | 99 | 2,475 | 295 | $ 35.53 | $ 26.22 | $ 60.53 |
| Montana | 27 | 93 | 2,511 | 379 | 31.47 | 25.39 | 57.16 |
| Washington | 25 | 62 | 1,550 | 259 | 31.26 | 18.45 | 41.92 |
| PACIFIC SOUTHWEST | 20 | 128 | 2,660 | 228 | $ 44.02 | $ 31.22 | $ 68.15 |
| Arizona | 9 | 108 | 972 | 204 | 35.49 | 24.66 | 23.68 |
| Colorado | 19 | 65 | 1,235 | 252 | 25.38 | 17.77 | 32.64 |

* Present Road Costs Analysis 111.4, plus cost of intermediate yarding at junction with Main Line, Analysis 109.1 and one Terminal handling from Analysis 106.4.

† Line Cost per loaded car mile Analysis 111.4, plus container handling from Analysis 106.13.

∮ Based on Analysis 106.13.

Analysis 113.2 Modernized Distributive Service - Branch Line

| OPERATING DISTRICT | CAR AVERAGES: AVERAGE LOAD TONS | AVERAGE HAUL (MILES) | NET TON MILES | NET TONS PER TRAIN | COST PER CAR: PRESENT WAY TRAINS * | MOTOR TRAINS ♯ | HIGHWAY CONTAINER OPERATION ♯ |
|---|---|---|---|---|---|---|---|
| UNITED STATES | 28 | 33 | 924 | 195 | $ 20.90 | $ 13.27 | $ 24.21 |
| EASTERN | 31 | 20 | 620 | 287 | $ 18.84 | $ 11.56 | $ 18.70 |
| SOUTHERN | 32 | 34 | 1,088 | 222 | 18.46 | 15.43 | 28.38 |
| WESTERN | 22 | 51 | 1,122 | 147 | 25.73 | 15.48 | 27.59 |
| NEW ENGLAND | 17 | 27 | 459 | 111 | $ 24.04 | $ 9.35 | $ 13.27 |
| Connecticut | 16 | 17 | 272 | 86 | 21.65 | 7.75 | 8.95 |
| Maine | 19 | 37 | 703 | 117 | 24.58 | 11.89 | 20.05 |
| Massachusetts | 16 | 21 | 336 | 113 | 24.24 | 7.88 | 10.80 |
| New Hampshire | 19 | 20 | 380 | 106 | 24.59 | 8.32 | 11.44 |
| Rhode Island | 14 | 10 | 140 | 46 | 25.37 | 7.73 | 5.16 |
| Vermont | 7 | 23 | 161 | 71 | 19.15 | 9.00 | 5.89 |
| TRUNK LINE | 33 | 17 | 561 | 365 | $ 16.97 | $ 11.53 | $ 18.51 |
| Delaware | 22 | 24 | 528 | 160 | 17.85 | 9.81 | 14.51 |
| Maryland | 28 | 15 | 420 | 245 | 16.40 | 9.34 | 13.37 |
| New Jersey | 24 | 13 | 312 | 240 | 16.41 | 7.94 | 10.81 |
| New York | 29 | 26 | 754 | 508 | 18.24 | 12.14 | 22.41 |
| Pennsylvania | 35 | 15 | 525 | 354 | 16.75 | 11.69 | 16.78 |
| CENTRAL | 29 | 26 | 754 | 248 | $ 20.76 | $ 12.14 | $ 22.29 |
| Illinois | 29 | 34 | 986 | 204 | 23.13 | 13.94 | 25.56 |
| Indiana | 23 | 37 | 851 | 216 | 26.41 | 12.76 | 24.29 |
| Michigan | 29 | 45 | 1,305 | 178 | 25.42 | 16.41 | 33.95 |
| Ohio | 29 | 17 | 493 | 380 | 18.66 | 10.12 | 16.26 |
| POCAHONTAS | 49 | 27 | 1,323 | 476 | $ 15.85 | $ 20.85 | $ 38.16 |
| Virginia | 47 | 15 | 705 | 282 | 12.90 | 15.68 | 22.50 |
| West Virginia | 51 | 37 | 1,887 | 570 | 18.50 | 25.73 | 53.79 |
| SOUTHEASTERN | 21 | 38 | 796 | 154 | $ 20.15 | $ 12.53 | $ 22.47 |
| Alabama | 26 | 45 | 1,170 | 201 | 20.67 | 15.07 | 30.32 |
| Florida | 22 | 39 | 858 | 146 | 21.17 | 12.96 | 23.86 |
| Georgia | 16 | 44 | 704 | 120 | 18.81 | 12.71 | 18.46 |
| Kentucky | 38 | 65 | 2,470 | 300 | 26.83 | 27.49 | 65.27 |
| Mississippi | 20 | 23 | 460 | 131 | 18.36 | 9.17 | 12.89 |
| North Carolina | 16 | 31 | 496 | 98 | 19.57 | 10.32 | 13.39 |
| South Carolina | 7 | 17 | 119 | 109 | 16.76 | 5.55 | 5.11 |
| Tennessee | 20 | 26 | 520 | 127 | 18.93 | 9.80 | 15.35 |
| WESTERN TRUNK LINE | 25 | 52 | 1,300 | 138 | $ 26.57 | $ 16.35 | $ 31.73 |
| Iowa | 34 | 46 | 1,564 | 112 | 26.20 | 19.54 | 30.19 |
| Kansas | 23 | 60 | 1,380 | 182 | 27.58 | 17.59 | 37.92 |
| Minnesota | 20 | 52 | 1,040 | 121 | 28.29 | 15.26 | 25.33 |
| Missouri | 30 | 57 | 1,710 | 134 | 25.94 | 19.80 | 48.22 |
| Nebraska | 22 | 59 | 1,298 | 129 | 28.80 | 17.16 | 35.95 |
| North Dakota | 22 | 66 | 1,452 | 164 | 28.10 | 18.63 | 38.13 |
| South Dakota | 22 | 36 | 792 | 96 | 24.93 | 12.90 | 22.92 |
| Wisconsin | 21 | 28 | 588 | 111 | 23.20 | 10.43 | 16.71 |
| SOUTHWESTERN | 21 | 43 | 903 | 166 | $ 20.78 | $ 13.58 | $ 23.63 |
| Arkansas | 18 | 34 | 612 | 158 | 19.55 | 11.04 | 15.86 |
| Louisiana | 21 | 26 | 546 | 133 | 19.31 | 10.01 | 16.12 |
| New Mexico | 31 | 49 | 1,519 | 232 | 20.38 | 16.60 | 38.06 |
| Oklahoma | 24 | 43 | 1,032 | 185 | 21.29 | 14.24 | 27.40 |
| Texas | 20 | 49 | 980 | 160 | 21.48 | 14.63 | 24.70 |
| PACIFIC NORTHWEST | 26 | 74 | 1,924 | 159 | $ 38.78 | $ 21.18 | $ 48.04 |
| Montana | 25 | 39 | 975 | 167 | 27.43 | 13.62 | 27.13 |
| Washington | 26 | 41 | 1,066 | 177 | 30.86 | 14.25 | 28.95 |
| PACIFIC SOUTHWEST | 14 | 52 | 728 | 130 | $ 25.23 | $ 13.95 | $ 17.72 |
| Arizona | 20 | 91 | 1,820 | 285 | 29.85 | 23.45 | 47.03 |
| California | 20 | 88 | 1,760 | 136 | 38.71 | 22.82 | 46.19 |
| Colorado | 11 | 29 | 319 | 63 | 18.75 | 12.34 | 8.87 |

* Present Road Costs Analysis 111.5, plus cost of intermediate yarding at junction with Main Line, Analysis 109.1 and one Terminal handling from Analysis 106.4.
♯ Line Cost per loaded car mile Analysis 135.1, plus container handling from Analysis 106.13.
♯ Based on Analysis 106.13.



Analysis 115.1 Shipper Traffic Service - Number of Replies

| | UNITED STATES | NEW ENGLAND | NEW YORK CITY | PHILADELPHIA | OTHER TRUNK LINE | SOUTH EAST | CHICAGO | ST. LOUIS | OTHER CENTRAL FREIGHT | WESTERN TRUNK | SOUTH WESTERN | PACIFIC COAST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER OF REPLIES | 7,291 | 627 | 488 | 264 | 1,178 | 865 | 423 | 121 | 1,411 | 1,120 | 284 | 510 |
| PERCENT OF REPLIES | | | | | | | | | | | | |
| TRAFFIC SERVICE OBTAINED FROM: | | | | | | | | | | | | |
| Firm traffic department | 26% | 25% | 36% | 25% | 23% | 19% | 39% | 30% | 27% | 27% | 29% | 25% |
| Firm officers, who perform other duties | 26 | 33 | 31 | 28 | 22 | 21 | 32 | 30 | 28 | 23 | 24 | 29 |
| Joint traffic bureau or association | 10 | 4 | 2 | 5 | 6 | 15 | 7 | 7 | 9 | 18 | 14 | 7 |
| Traffic expert, or other traffic bureau in general practice | 9 | 6 | 7 | 11 | 7 | 11 | 7 | 17 | 9 | 11 | 7 | 11 |
| Rate or claim bureau | 5 | 3 | 6 | 4 | 5 | 6 | 8 | 4 | 5 | 7 | 2 | 2 |
| Rely on railroad officers or agents | 61 | 75 | 53 | 63 | 68 | 68 | 42 | 40 | 63 | 55 | 56 | 57 |
| RAIL-PATRON CONTACTS | | | | | | | | | | | | |
| Rail traffic executive officers call | 33% | 28% | 26% | 22% | 32% | 33% | 27% | 29% | 34% | 37% | 48% | 37% |
| Other railroad executives call | 19 | 16 | 13 | 15 | 18 | 19 | 16 | 14 | 20 | 23 | 30 | 19 |
| Rail operating officers call | 17 | 11 | 11 | 12 | 18 | 21 | 12 | 10 | 20 | 20 | 24 | 17 |
| Rail local agents keep in close contact | 63 | 63 | 53 | 61 | 65 | 62 | 48 | 39 | 68 | 66 | 70 | 63 |
| Rail local agents furnish rates, tracing, etc. | 65 | 75 | 56 | 72 | 69 | 68 | 54 | 40 | 69 | 61 | 58 | 64 |
| Commercial agents of local lines call | 61 | 56 | 59 | 50 | 47 | 70 | 65 | 74 | 67 | 65 | 74 | 55 |
| Commercial agents of foreign lines, (i.e. Railroads not serving the city) call | 57 | 60 | 45 | 42 | 49 | 63 | 44 | 48 | 62 | 61 | 65 | 54 |
| FOREIGN LINE CALLS | | | | | | | | | | | | |
| Foreign line calls are helpful | 36% | 40% | 36% | 33% | 32% | 31% | 35% | 35% | 38% | 39% | 34% | 32% |
| Foreign line calls are useless | 21 | 19 | 13 | 14 | 18 | 26 | 16 | 13 | 22 | 22 | 25 | 25 |
| Foreign line calls affect routing | 23 | 22 | 20 | 21 | 18 | 21 | 22 | 19 | 25 | 28 | 32 | 25 |
| OFF LINE AGENCY SERVICING | | | | | | | | | | | | |
| Information about rates, classification, etc. | 11% | 13% | 16% | 14% | 8% | 7% | 17% | 9% | 11% | 11% | 10% | 10% |
| Assistance in securing rate changes or adjustments | 8 | 7 | 8 | 6 | 6 | 8 | 11 | 8 | 10 | 9 | 9 | 7 |
| Information about special tariff privileges, reconsignments, etc. | 7 | 5 | 9 | 6 | 5 | 5 | 9 | 6 | 8 | 7 | 7 | 6 |
| Information about schedules, service, etc. | 17 | 20 | 19 | 16 | 14 | 13 | 17 | 11 | 20 | 18 | 15 | 14 |
| Information as to terminal service or deliveries at other end | 15 | 14 | 20 | 12 | 12 | 12 | 14 | 17 | 17 | 17 | 13 | 14 |
| Information of market or crop conditions | 3 | 1 | 1 | 1 | 2 | 4 | 2 | 2 | 3 | 3 | 2 | 3 |
| Tracing Shipments | 20 | 20 | 22 | 20 | 16 | 16 | 22 | 17 | 23 | 24 | 19 | 16 |
| Handling reconsignments | 5 | 3 | 7 | 6 | 4 | 5 | 6 | 5 | 5 | 5 | 6 | 3 |
| Handling of complaints about rates or service, claims, etc. | 8 | 7 | 9 | 7 | 7 | 7 | 10 | 8 | 9 | 10 | 10 | 7 |
| ROUTING: | | | | | | | | | | | | |
| Routing largely influenced by solicitation | 22% | 20% | 20% | 21% | 19% | 20% | 25% | 26% | 21% | 28% | 27% | 26% |
| Routing largely influenced by friendship | 11 | 5 | 8 | 5 | 8 | 14 | 8 | 6 | 8 | 17 | 25 | 13 |
| Routing necessary to control reconsignment, etc. | 11 | 8 | 10 | 8 | 9 | 11 | 10 | 14 | 11 | 14 | 21 | 13 |
| Routing to compel good service | 63 | 68 | 67 | 62 | 57 | 58 | 65 | 60 | 72 | 61 | 56 | 53 |
| Routing beyond initial carrier unnecessary | 8 | 7 | 9 | 10 | 7 | 9 | 7 | 5 | 8 | 8 | 7 | 7 |
| Routing between initial and final carrier unnecessary | 7 | 7 | 7 | 7 | 6 | 8 | 7 | 2 | 8 | 6 | 7 | 6 |
| Routing privilege not of substantial value | 17 | 26 | 20 | 21 | 19 | 18 | 17 | 7 | 16 | 13 | 15 | 15 |

## SECTION 115. ROUTING

### Analysis 115.2 Shipper Traffic Service - Tonnage

| | UNITED STATES | NEW ENG-LAND | NEW YORK CITY | PHIL-ADEL-PHIA | OTHER TRUNK LINE | SOUTH EAST | CHI-CAGO | ST. LOUIS | OTHER CENTRAL FREIGHT | WEST-ERN TRUNK | SOUTH WEST-ERN | PACI-FIC COAST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REGIONAL TONNAGE DISTRIBUTION | 100% | 1% | 6% | 1% | 16% | 13% | 7% | 1% | 19% | 13% | 10% | 6% |
| PERCENTAGE OF TONS | | | | | | | | | | | | |
| TRAFFIC SERVICE OBTAINED FROM: | | | | | | | | | | | | |
| Firm traffic department | 68% | 32% | 68% | 93% | 52% | 31% | 92% | 52% | 71% | 59% | 48% | 56% |
| Firm officers, who perform other duties | 13 | 13 | 12 | 4 | 15 | 11 | 3 | 25 | 13 | 16 | 14 | 15 |
| Joint traffic bureau or association | 5 | 4 | 6 | 15 | 3 | 4 | 6 | 2 | 3 | 11 | 3 | 5 |
| Traffic expert, or other traffic bureau in general practice | 4 | 2 | 1 | 2 | 3 | 5 | 1 | 4 | 3 | 6 | 2 | 8 |
| Rate or claim bureau | 2 | 1 | 3 | 3 | 1 | 1 | 1 | - | 2 | 3 | 6 | 1 |
| Rely on railroad officers or agents | 18 | 24 | 17 | 7 | 33 | 24 | 5 | 3 | 15 | 16 | 5 | 19 |
| RAIL-PATRON CONTACTS | | | | | | | | | | | | |
| Rail traffic executive officers call | 73% | 21% | 78% | 38% | 58% | 39% | 88% | 50% | 78% | 70% | 54% | 56% |
| Other railroad executives call | 54 | 20 | 67 | 32 | 39 | 28 | 98 | 33 | 59 | 56 | 41 | 31 |
| Rail operating officers call | 51 | 16 | 54 | 29 | 45 | 31 | 79 | 31 | 58 | 53 | 32 | 26 |
| Rail local agents keep in close contact | 61 | 35 | 63 | 32 | 56 | 36 | 97 | 35 | 66 | 66 | 30 | 66 |
| Rail local agents furnish rates, tracing, etc. | 35 | 20 | 27 | 22 | 28 | 32 | 61 | 10 | 49 | 35 | 14 | 31 |
| Commercial agents of local lines call | 81 | 48 | 92 | 39 | 60 | 50 | 94 | 51 | 91 | 75 | 53 | 60 |
| Commercial agents of foreign lines (i.e. Railroads not serving the city) call | 80 | 44 | 77 | 34 | 64 | 50 | 93 | 52 | 89 | 74 | 54 | 67 |
| FOREIGN LINE CALLS | | | | | | | | | | | | |
| Foreign line calls are helpful | 65% | 33% | 88% | 38% | 51% | 31% | 90% | 42% | 68% | 65% | 43% | 45% |
| Foreign line calls are useless | 9 | 7 | 4 | 1 | 8 | 12 | 1 | 6 | 9 | 12 | 9 | 21 |
| Foreign line calls affect your routing | 42 | 13 | 77 | 67 | 36 | 24 | 66 | 6 | 39 | 45 | 35 | 37 |
| OFF LINE AGENCY SERVICING | | | | | | | | | | | | |
| Information about rates, classification, etc. | 26% | 12% | 44% | 18% | 26% | 15% | 56% | 8% | 21% | 21% | 8% | 27% |
| Assistance in securing rate changes or adjustment | 27 | 8 | 37 | 17 | 27 | 16 | 55 | 13 | 26 | 26 | 7 | 21 |
| Information about special tariff privileges, reconsignments, etc. | 21 | 6 | 34 | 15 | 30 | 17 | 12 | 7 | 12 | 23 | 11 | 26 |
| Information about schedules, service, etc. | 36 | 16 | 50 | 25 | 36 | 27 | 40 | 7 | 39 | 41 | 13 | 22 |
| Information as to terminal service or deliveries at other end | 36 | 10 | 67 | 66 | 36 | 26 | 51 | 30 | 24 | 40 | 10 | 23 |
| Information of market or crop conditions | 7 | 4 | 1 | - | 17 | 10 | 2 | 2 | 3 | 5 | 5 | 2 |
| Tracing Shipments | 43 | 20 | 70 | 68 | 41 | 22 | 65 | 30 | 39 | 53 | 18 | 29 |
| Handling reconsignments | 22 | 9 | 42 | 60 | 16 | 17 | 38 | 27 | 15 | 20 | 3 | 9 |
| Handling of complaints about rates or service, claims, etc. | 26 | 11 | 50 | 17 | 15 | 17 | 34 | 7 | 26 | 40 | 12 | 22 |
| ROUTING | | | | | | | | | | | | |
| Routing largely influenced by solicitation | 27% | 20% | 29% | 10% | 35% | 15% | 36% | 29% | 25% | 22% | 29% | 27% |
| Routing largely influenced by friendship | 11 | 11 | 16 | 1 | 5 | 14 | 5 | 24 | 5 | 22 | 12 | 10 |
| Routing necessary to control reconsignment, etc. | 32 | 12 | 49 | 5 | 31 | 12 | 56 | 10 | 33 | 27 | 26 | 37 |
| Routing to compel good service | 71 | 35 | 86 | 58 | 60 | 42 | 81 | 29 | 83 | 66 | 47 | 50 |
| Routing beyond initial carrier unnecessary | 4 | 11 | 1 | 1 | 4 | 7 | - | 1 | 3 | 2 | 2 | 2 |
| Routing between initial and final carrier unnecessary | 3 | 3 | 8 | - | 4 | 6 | - | 4 | 2 | 2 | 1 | 1 |
| Routing privilege not of substantial value | 4 | 5 | 8 | 3 | 4 | 4 | 5 | 1 | 5 | 2 | 1 | 2 |

TOTAL TONNAGE - 290,202,853



## SECTION 116. INTERCHANGE COST

### Analysis 116.1 Rail Yard Unit Cost of Intercarrier Movements - 1932

| DISTRICT OR TERRITORY | ALL INTERCHANGES TOTAL CARS (000) | ALL INTERCHANGES UNIT COST | TERMINAL INTERCHANGES TOTAL CARS (000) | TERMINAL INTERCHANGES UNIT COST | LINE INTERCHANGES TOTAL CARS (000) | LINE INTERCHANGES UNIT COST | INTERMEDIATE INTERCHANGE TOTAL CARS (000) | INTERMEDIATE INTERCHANGE UNIT COST |
|---|---|---|---|---|---|---|---|---|
| | COST PER INTERCHANGE HANDLING | | | | | | | |
| UNITED STATES | 50,019 | $ 6.51 | 12,250 | $ 11.78 | 35,167 | $ 4.80 | 2,602 | $ 4.88 |
| EASTERN | 29,267 | 6.22 | 6,072 | 11.58 | 21,657 | 4.83 | 1,538 | 4.68 |
| SOUTHERN | 6,219 | 6.16 | 1,463 | 11.27 | 4,643 | 4.52 | 113 | 7.23 |
| WESTERN | 14,533 | 7.25 | 4,716 | 12.20 | 8,866 | 4.86 | 951 | 4.90 |
| NEW ENGLAND | 1,825 | 4.10 | 212 | 9.68 | 1,613 | 3.37 | - | - |
| TRUNK LINE | 11,247 | 5.80 | 1,239 | 12.46 | 9,958 | 4.97 | 50 | 6.83 |
| CENTRAL | 16,194 | 6.75 | 4,620 | 11.43 | 10,086 | 4.93 | 1,488 | 4.61 |
| POCAHONTAS | 1,794 | 4.95 | 273 | 10.74 | 1,483 | 3.82 | 38 | 7.75 |
| SOUTHEASTERN | 4,425 | 6.65 | 1,190 | 11.40 | 3,161 | 4.86 | 74 | 6.96 |
| WESTERN TRUNK LINE | 8,647 | 5.05 | 3,105 | 12.29 | 4,652 | 4.89 | 890 | 4.40 |
| SOUTHWESTERN | 3,457 | 5.92 | 996 | 9.92 | 2,429 | 4.29 | 32 | 4.93 |
| PACIFIC NORTHWEST | 660 | 11.71 | 241 | 14.77 | 415 | 7.54 | 4 | 10.59 |
| PACIFIC SOUTHWEST | 1,770 | 7.54 | 375 | 15.89 | 1,371 | 5.00 | 24 | 22.15* |
| | COST PER CAR INTERCHANGED | | | | | | | |
| UNITED STATES | 24,116 | $ 10.78 | 6,533 | $ 22.09 | 17,583 | $ 9.60 | 1,301 | $ 9.76 |
| EASTERN | 14,010 | 10.78 | 3,182 | 22.10 | 10,828 | 9.66 | 769 | 9.38 |
| SOUTHERN | 3,091 | 9.78 | 769 | 21.44 | 2,322 | 9.04 | 56 | 14.46 |
| WESTERN | 7,015 | 11.22 | 2,582 | 22.29 | 4,433 | 9.72 | 475 | 9.80 |
| NEW ENGLAND | 915 | 7.04 | 108 | 18.97 | 807 | 6.74 | - | - |
| TRUNK LINE | 5,736 | 10.26 | 757 | 20.39 | 4,979 | 9.94 | 25 | 14.14 |
| CENTRAL | 7,359 | 11.65 | 2,316 | 22.80 | 5,043 | 9.86 | 744 | 9.22 |
| POCAHONTAS | 893 | 8.53 | 152 | 19.34 | 741 | 7.64 | 19 | 15.50 |
| SOUTHEASTERN | 2,198 | 10.29 | 618 | 21.96 | 1,580 | 9.72 | 37 | 13.92 |
| WESTERN TRUNK LINE | 4,007 | 11.84 | 1,681 | 22.70 | 2,326 | 9.78 | 445 | 8.80 |
| SOUTHWESTERN | 1,761 | 8.94 | 547 | 18.07 | 1,214 | 8.58 | 16 | 9.86 |
| PACIFIC NORTHWEST | 341 | 15.00 | 133 | 26.61 | 208 | 15.08 | 2 | 21.18 |
| PACIFIC SOUTHWEST | 907 | 11.54 | 221 | 26.99 | 686 | 10.00 | 12 | 44.30* |

* These costs were due to an average of 15 day car detention on intermediate interchanges.

SECTION 116. INTERCHANGE COST

Analysis 116.2 Rail Yard Unit Cost of Intercarrier Movements - Eastern District - 1932

| DISTRICT OR TERRITORY | ALL INTERCHANGES TOTAL CARS (000) | ALL INTERCHANGES UNIT COST | TERMINAL INTERCHANGES TOTAL CARS (000) | TERMINAL INTERCHANGES UNIT COST | LINE INTERCHANGES TOTAL CARS (000) | LINE INTERCHANGES UNIT COST | INTERMEDIATE INTERCHANGE TOTAL CARS (000) | INTERMEDIATE INTERCHANGE UNIT COST |
|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 50,019 | $ 6.51 | 12,250 | $ 11.78 | 35,167 | $ 4.80 | 2,602 | $ 4.88 |
| EASTERN DISTRICT | 29,267 | $ 6.22 | 6,072 | $ 11.58 | 21,657 | $ 4.83 | 1,538 | $ 4.68 |
| NEW ENGLAND | 1,825 | $ 4.10 | 212 | $ 9.66 | 1,613 | $ 3.37 | - | - |
| Boston | 95 | 11.07 | 93 | 11.18 | 2 | 4.84 | - | - |
| Bridgeport | - | - | - | - | - | - | - | - |
| Fall River | - | - | - | - | - | - | - | - |
| Hartford | - | - | - | - | - | - | - | - |
| Lowell | 58 | 4.04 | 2 | 13.31 | 56 | 3.65 | - | - |
| Lynn | - | - | - | - | - | - | - | - |
| New Bedford | - | - | - | - | - | - | - | - |
| New Haven | - | - | - | - | - | - | - | - |
| Providence | 4 | 4.98 | 1 | 7.71 | 3 | 16.46 | - | - |
| Springfield | 128 | 4.23 | 15 | 8.42 | 113 | 3.66 | - | - |
| Worcester | 266 | 3.49 | 28 | 11.45 | 238 | 2.56 | - | - |
| Majors | 958 | 3.53 | 41 | 7.41 | 927 | 3.36 | - | - |
| Minors | 307 | 4.09 | 32 | 7.05 | 275 | 3.75 | - | - |
| TRUNK LINE | 11,247 | $ 5.80 | 1,239 | $ 12.16 | 9,958 | $ 4.97 | 50 | $ 6.83 |
| Albany | 53 | 11.21 | 31 | 15.06 | 22 | 5.95 | - | - |
| Baltimore | 101 | 8.56 | 72 | 10.20 | 29 | 4.58 | - | - |
| Buffalo | 1,194 | 7.56 | 323 | 13.73 | 858 | 5.27 | 13 | 5.40 |
| Erie | 52 | 11.28 | 24 | 15.21 | 27 | 8.09 | 1 | 4.57 |
| New York | 1,241 | 10.26 | 89 | 15.50 | 1,144 | 9.87 | 8 | 6.14 |
| Paterson | - | - | - | - | - | - | - | - |
| Philadelphia | 523 | 6.11 | 58 | 10.45 | 459 | 5.48 | 7 | 11.81 |
| Pittsburgh | 303 | 8.63 | 139 | 11.80 | 164 | 5.92 | - | - |
| Reading | * | 6.58 | - | - | * | 6.58 | - | - |
| Rochester | 49 | 10.58 | 22 | 15.82 | 26 | 6.59 | - | - |
| Scranton | 167 | 5.62 | 3 | 23.45 | 164 | 5.33 | 1 | 25.45 |
| Syracuse | 28 | 7.44 | 9 | 10.94 | 19 | 5.66 | - | - |
| Trenton | 1 | 9.34 | * | 9.83 | * | 9.19 | - | - |
| Utica | 40 | 5.24 | 10 | 9.65 | 28 | 3.69 | 2 | 3.25 |
| Washington | 42 | 14.98 | 9 | 16.22 | 33 | 14.62 | - | - |
| Wilmington | 30 | 9.03 | 13 | 13.53 | 17 | 5.66 | - | - |
| Majors | 4,183 | 4.72 | 283 | 10.96 | 3,885 | 4.26 | 14 | 6.59 |
| Minors | 3,241 | 4.05 | 153 | 11.55 | 3,083 | 3.68 | 4 | 6.07 |
| CENTRAL | 16,194 | $ 6.75 | 4,620 | $ 11.43 | 10,086 | $ 4.93 | 1,488 | $ 4.61 |
| Akron | 118 | 7.04 | 89 | 8.26 | 29 | 3.32 | - | - |
| Canton | 19 | 11.76 | 15 | 13.85 | 4 | 4.72 | - | - |
| Chicago | 5,142 | 8.36 | 2,141 | 11.53 | 1,806 | 7.69 | 1,195 | 3.72 |
| Cincinnati | 1,271 | 6.17 | 204 | 11.63 | 1,039 | 5.02 | 28 | 9.18 |
| Cleveland | 366 | 12.40 | 231 | 15.04 | 116 | 7.47 | 19 | 10.51 |
| Columbus | 933 | 4.86 | 80 | 10.69 | 853 | 4.31 | - | - |
| Dayton | 68 | 5.67 | 15 | 10.54 | 53 | 4.25 | - | - |
| Detroit | 472 | 9.79 | 291 | 11.58 | 165 | 5.16 | 16 | 7.08 |
| Evansville | 135 | 6.40 | 38 | 12.15 | 93 | 4.11 | 4 | 4.85 |
| Flint | 14 | 9.05 | 14 | 9.05 | - | - | - | - |
| Fort Wayne | 30 | 10.33 | 14 | 12.61 | 16 | 8.38 | * | 6.45 |
| Grand Rapids | 29 | 11.75 | 19 | 14.20 | 9 | 6.37 | 1 | 14.44 |
| Indianapolis | 214 | 8.35 | 109 | 12.06 | 105 | 4.48 | - | - |
| Milwaukee | 155 | 11.30 | 69 | 12.94 | 85 | 10.01 | 1 | 7.29 |
| Peoria | 409 | 4.32 | 118 | 7.04 | 168 | 2.54 | 122 | 4.13 |
| South Bend | 41 | 6.03 | 11 | 13.31 | 25 | 3.26 | 5 | 3.42 |
| Toledo | 1,128 | 5.89 | 172 | 11.45 | 906 | 4.36 | 50 | 7.85 |
| Youngstown | 193 | 5.45 | 51 | 16.69 | 142 | 4.13 | * | 21.22 |
| Majors | 2,625 | 5.70 | 646 | 10.27 | 1,939 | 3.84 | 40 | 22.11 |
| Minors | 2,531 | 4.82 | 291 | 11.21 | 2,233 | 3.99 | 6 | 4.65 |

* Less than 500 cars.



SECTION 116. INTERCHANGE COST

Analysis 116.3 Rail Yard Unit Cost of Intercarrier Movements - Southern and Western Districts - 1932

| | ALL INTERCHANGES TOTAL CARS (000) | ALL INTERCHANGES UNIT COST | TERMINAL INTERCHANGES TOTAL CARS (000) | TERMINAL INTERCHANGES UNIT COST | LINE INTERCHANGES TOTAL CARS (000) | LINE INTERCHANGES UNIT COST | INTERMEDIATE INTERCHANGES TOTAL CARS (000) | INTERMEDIATE INTERCHANGES UNIT COST |
|---|---|---|---|---|---|---|---|---|
| UNITED STATES | 50,019 | $ 6.51 | 12,250 | $11.78 | 35,167 | $ 4.90 | 2,602 | $ 4.88 |
| SOUTHERN DISTRICT | 6,219 | 6.16 | 1,463 | 11.27 | 4,643 | 4.52 | 113 | 7.23 |
| WESTERN DISTRICT | 14,533 | 7.25 | 4,716 | 12.20 | 8,866 | 4.86 | 951 | 4.90 |
| POCAHONTAS | 1,794 | 4.95 | 273 | 10.74 | 1,483 | 3.82 | 38 | 7.75 |
| Norfolk | 248 | 8.86 | 87 | 12.26 | 161 | 7.02 | * | 17.66 |
| Richmond | 322 | 4.94 | 78 | 10.22 | 226 | 2.88 | 18 | 8.10 |
| Majors | 872 | 5.20 | 90 | 10.84 | 762 | 4.48 | 20 | 7.36 |
| Minors | 354 | 1.61 | 19 | 5.43 | 334 | 1.39 | * | 1.65 |
| SOUTHEASTERN | 4,425 | 6.65 | 1,190 | 11.40 | 3,161 | 4.86 | 74 | 6.96 |
| Atlanta | 347 | 6.62 | 90 | 11.00 | 256 | 5.07 | 1 | 9.00 |
| Birmingham | 230 | 5.89 | 52 | 10.04 | 178 | 4.67 | - | - |
| Chattanooga | 98 | 8.43 | 39 | 13.39 | 58 | 4.47 | 1 | 33.55 |
| Jacksonville | 97 | 9.31 | 50 | 10.66 | 47 | 7.84 | * | 10.40 |
| Knoxville | 40 | 8.43 | 13 | 12.55 | 27 | 6.34 | * | 10.45 |
| Louisville | 331 | 8.81 | 112 | 14.24 | 212 | 5.95 | 7 | 8.07 |
| Memphis | 345 | 7.38 | 157 | 10.83 | 187 | 4.49 | 1 | 3.91 |
| Miami | 2 | 10.55 | 1 | 15.41 | 1 | 5.80 | - | - |
| Nashville | 86 | 7.07 | 19 | 12.29 | 67 | 5.62 | * | 16.27 |
| New Orleans | 263 | 10.87 | 153 | 11.90 | 102 | 9.76 | 8 | 5.07 |
| Tampa | 7 | 10.01 | 4 | 13.82 | 3 | 4.87 | - | - |
| Majors | 1,431 | 7.33 | 369 | 12.38 | 1,009 | 5.53 | 53 | 6.45 |
| Minors | 1,148 | 3.65 | 130 | 6.42 | 1,015 | 3.29 | 3 | 5.08 |
| WESTERN TRUNK LINE | 8,647 | 5.05 | 3,105 | 12.29 | 4,652 | 4.89 | 890 | 4.40 |
| Denver | 226 | 9.70 | 83 | 14.02 | 134 | 7.14 | 9 | 8.24 |
| Des Moines | 128 | 12.07 | 49 | 22.04 | 76 | 6.01 | 3 | 5.36 |
| Duluth | 174 | 16.18 | 135 | 17.98 | 35 | 10.10 | 3 | 8.05 |
| Kansas City | 1,680 | 7.17 | 599 | 11.58 | 1,065 | 4.70 | 16 | 6.11 |
| Minneapolis | 494 | 11.34 | 250 | 16.72 | 219 | 5.75 | 25 | 6.53 |
| Omaha | 985 | 7.45 | 241 | 15.66 | 716 | 4.74 | 28 | 5.87 |
| St. Paul | 266 | 7.16 | 97 | 9.30 | 134 | 6.06 | 35 | 5.45 |
| St. Louis | 2,463 | 5.78 | 845 | 9.57 | 905 | 3.62 | 713 | 4.05 |
| Wichita | 51 | 7.84 | 29 | 9.91 | 20 | 5.21 | 2 | 4.28 |
| Davenport | 49 | 10.68 | 29 | 14.72 | 19 | 4.75 | 1 | 5.79 |
| Majors | 1,226 | 9.52 | 546 | 12.88 | 647 | 6.91 | 33 | 4.96 |
| Minors | 904 | 5.01 | 201 | 9.27 | 680 | 3.73 | 23 | 5.62 |
| SOUTHWESTERN | 3,457 | 5.92 | 996 | 9.92 | 2,429 | 4.29 | 32 | 4.93 |
| Dallas | 111 | 8.44 | 71 | 10.00 | 38 | 5.54 | 2 | 8.13 |
| El Paso | 171 | 3.63 | 42 | 5.39 | 128 | 3.05 | 1 | 1.88 |
| Fort Worth | 343 | 6.68 | 142 | 9.74 | 195 | 4.54 | 6 | 3.33 |
| Houston | 136 | 9.25 | 64 | 13.49 | 71 | 5.54 | 1 | 1.74 |
| Little Rock | 21 | 8.96 | 17 | 10.06 | 4 | 4.19 | - | - |
| Oklahoma City | 83 | 8.20 | 53 | 10.16 | 30 | 4.72 | * | 2.95 |
| San Antonio | 45 | 8.32 | 20 | 11.42 | 25 | 5.84 | - | - |
| Tulsa | 51 | 6.11 | 29 | 7.56 | 22 | 4.24 | * | 4.40 |
| Majors | 1,541 | 5.76 | 419 | 10.17 | 1,107 | 4.12 | 15 | 3.22 |
| Minors | 953 | 5.16 | 137 | 9.19 | 808 | 4.43 | 8 | 9.68 |
| PACIFIC NORTHWEST | 660 | 11.71 | 241 | 14.77 | 415 | 7.54 | 4 | 10.59 |
| Portland | 106 | 12.37 | 54 | 14.40 | 51 | 10.26 | 1 | 10.75 |
| Seattle | 59 | 13.01 | 45 | 13.82 | 14 | 10.52 | - | - |
| Spokane | 96 | 9.11 | 40 | 12.59 | 54 | 6.39 | 2 | 13.63 |
| Tacoma | 27 | 14.36 | 26 | 14.77 | 1 | 6.22 | * | 13.74 |
| Majors | 191 | 9.10 | 50 | 17.20 | 140 | 6.24 | 1 | 6.10 |
| Minors | 180 | 9.10 | 26 | 15.90 | 154 | 7.97 | * | 7.84 |
| PACIFIC SOUTHWEST | 1,770 | 7.54 | 375 | 15.89 | 1,371 | 5.00 | 24 | 22.15 |
| Long Beach | 3 | 13.30 | 3 | 13.30 | - | - | - | - |
| Los Angeles | 196 | 14.48 | 104 | 18.57 | 83 | 6.91 | 9 | 37.05 |
| Salt Lake City | 183 | 7.08 | 14 | 13.52 | 167 | 6.26 | 2 | 28.35 |
| Oakland | 47 | 14.88 | 38 | 15.35 | 4 | 11.52 | 5 | 14.18 |
| San Diego | 10 | 9.03 | 3 | 14.23 | 7 | 7.06 | - | - |
| San Francisco | 96 | 14.65 | 79 | 15.73 | 11 | 7.83 | 6 | 12.99 |
| Majors | 742 | 6.19 | 63 | 21.23 | 678 | 4.78 | * | 6.66 |
| Minors | 493 | 4.84 | 70 | 8.17 | 421 | 4.28 | 2 | 2.31 |

* Less than 500 cars

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